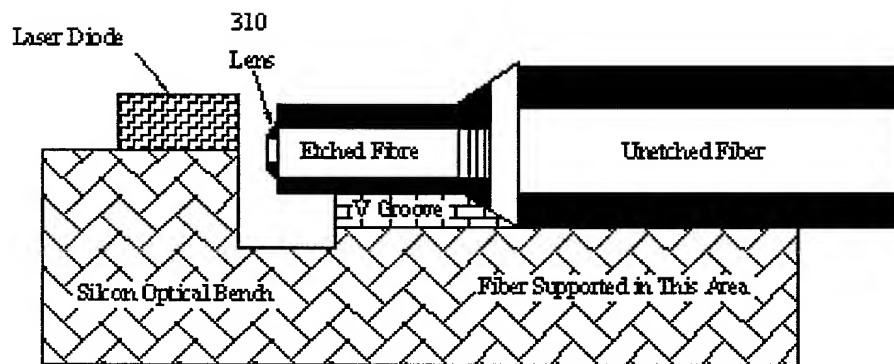


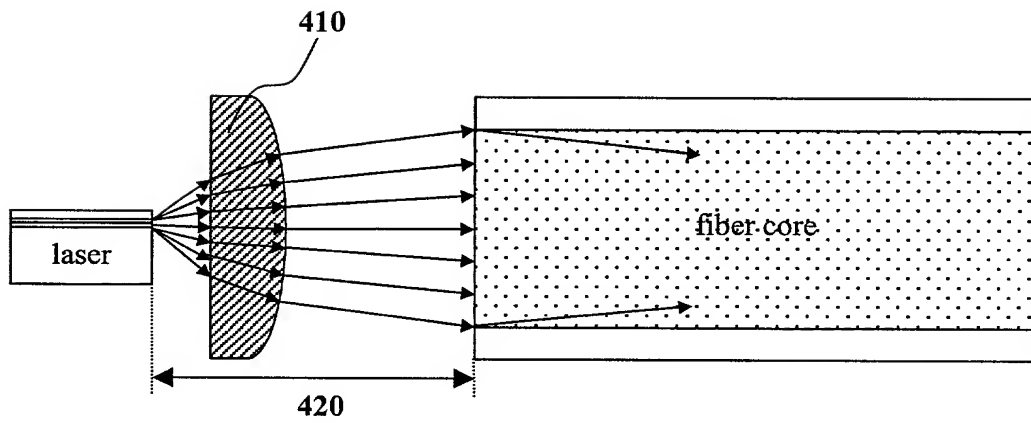
PRIOR ART

FIG 2



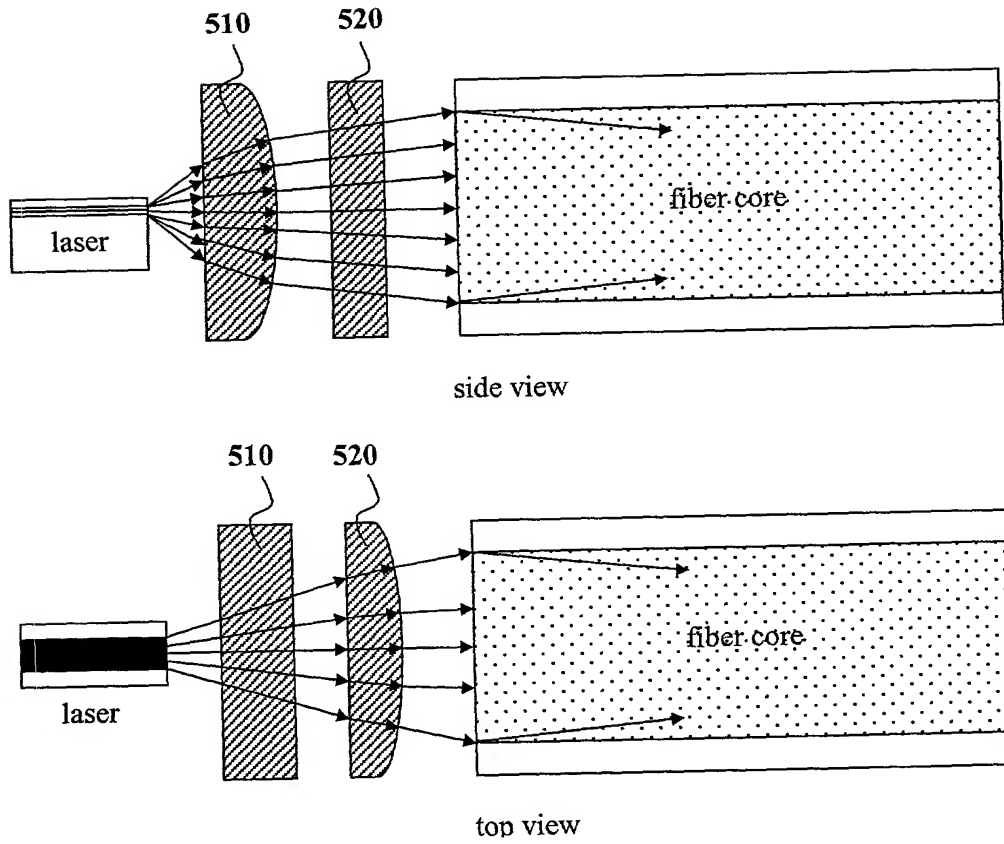
PRIOR ART

FIG. 3



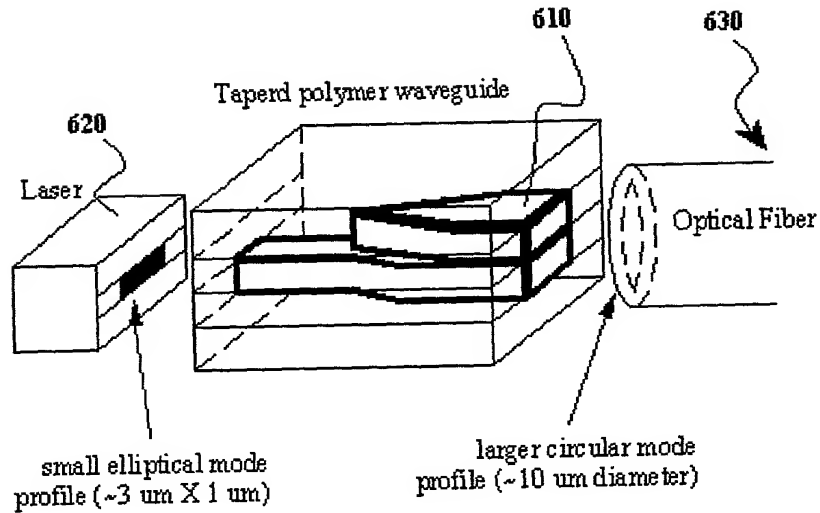
PRIOR ART

FIG. 4



PRIOR ART

FIG. 5



PRIOR ART

FIG. 6

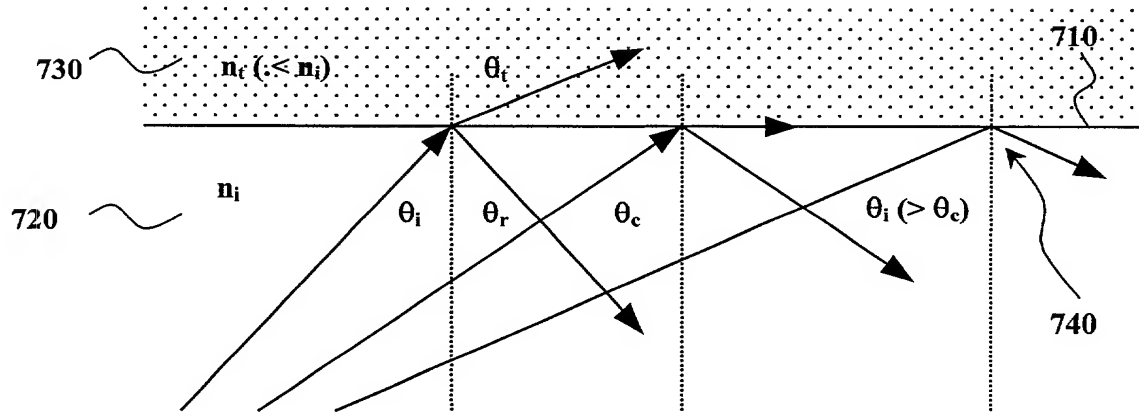


FIG 7

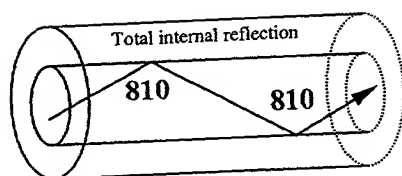


FIG. 8

10033674-101901
FOOTPRINT 4/9/2007

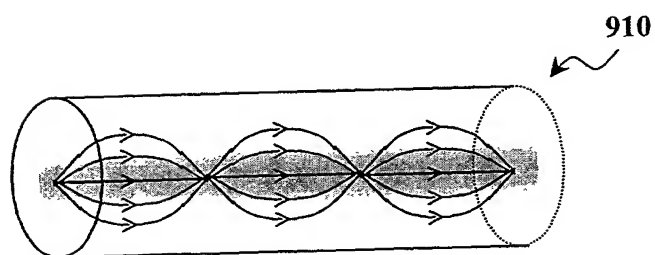


FIG 9

106707-429800

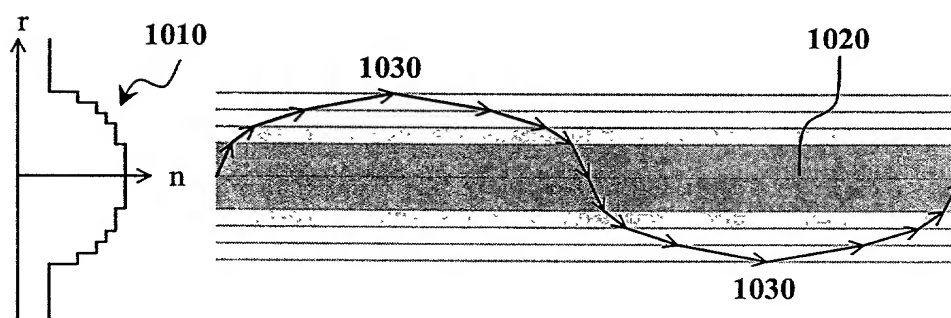


FIG 10

1003674-10191

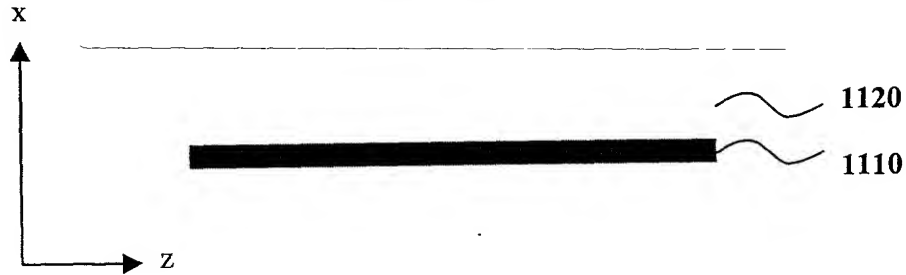


Fig 11A

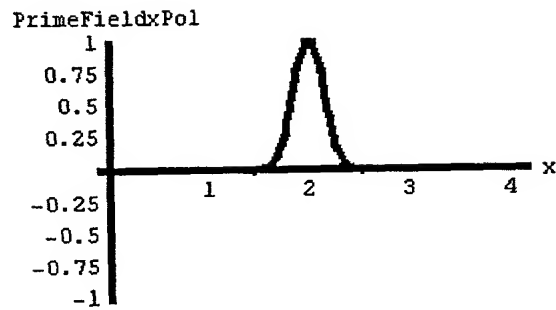


Fig 11B

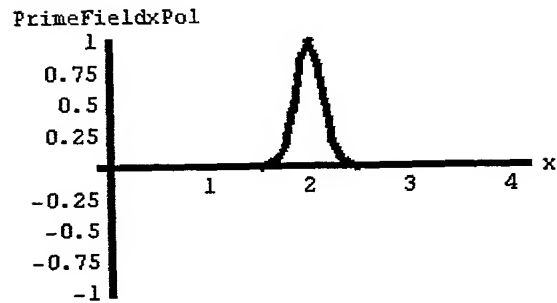


Fig 11C

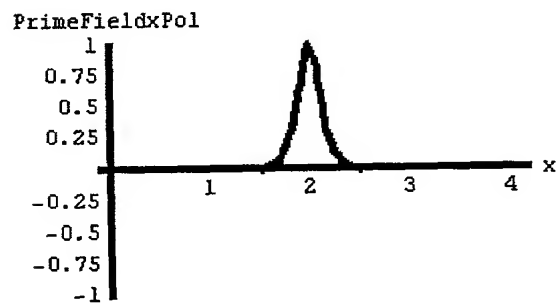


Fig 11D

TOP OF 429E8001

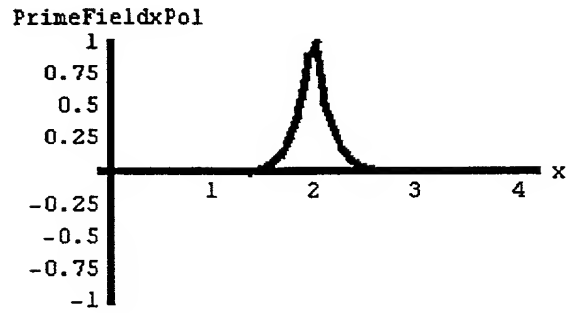


Fig 11E

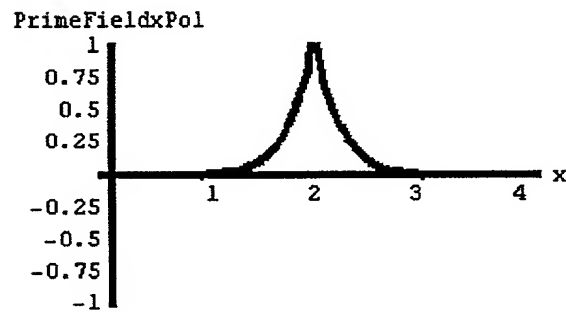


Fig 11F

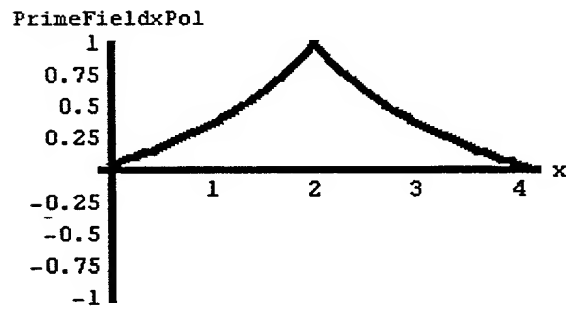


Fig 11G

10083674-101501

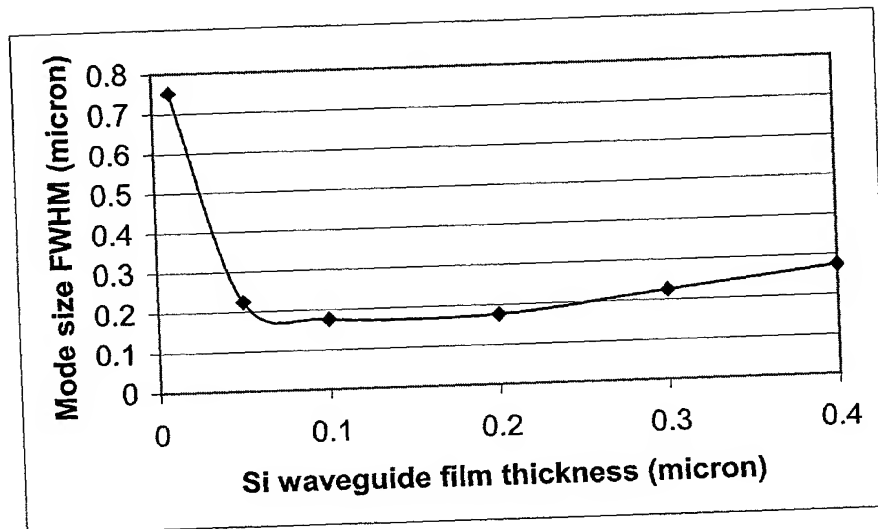


FIG. 12

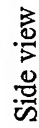


FIG 13

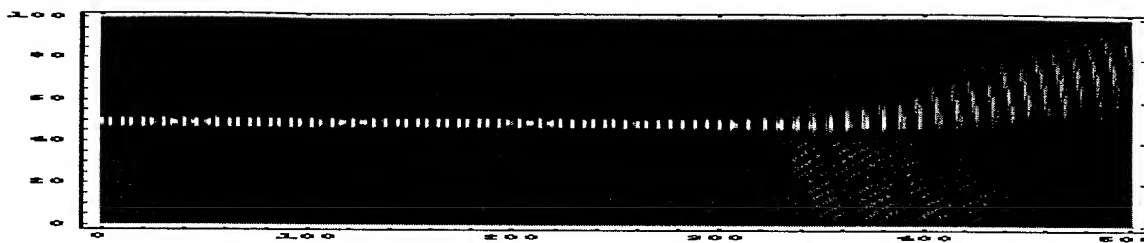


FIG 14

106707" 429800T

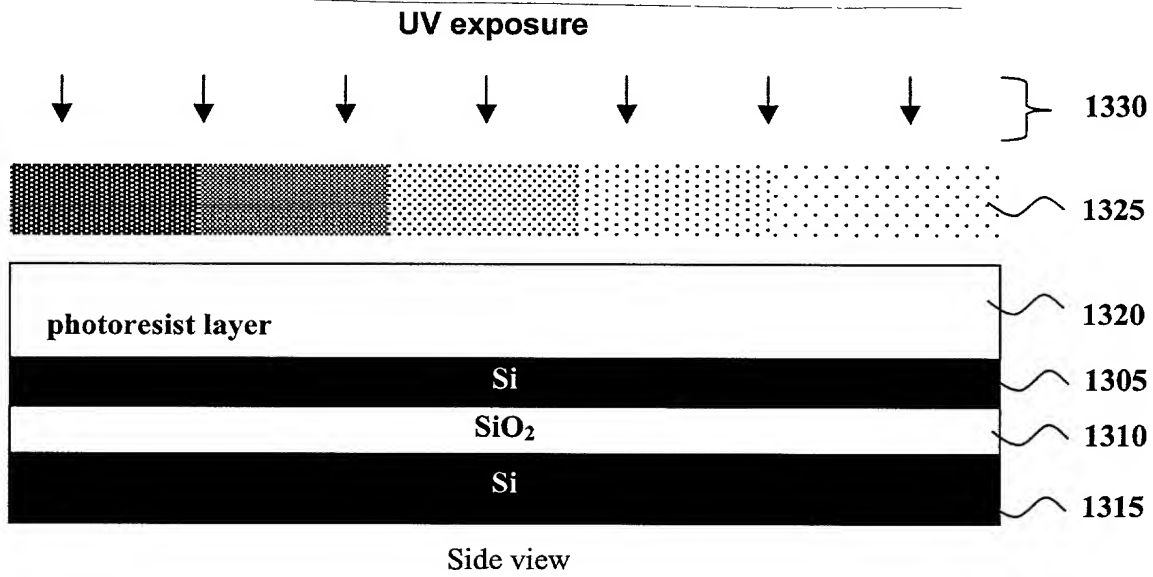


Fig 15A

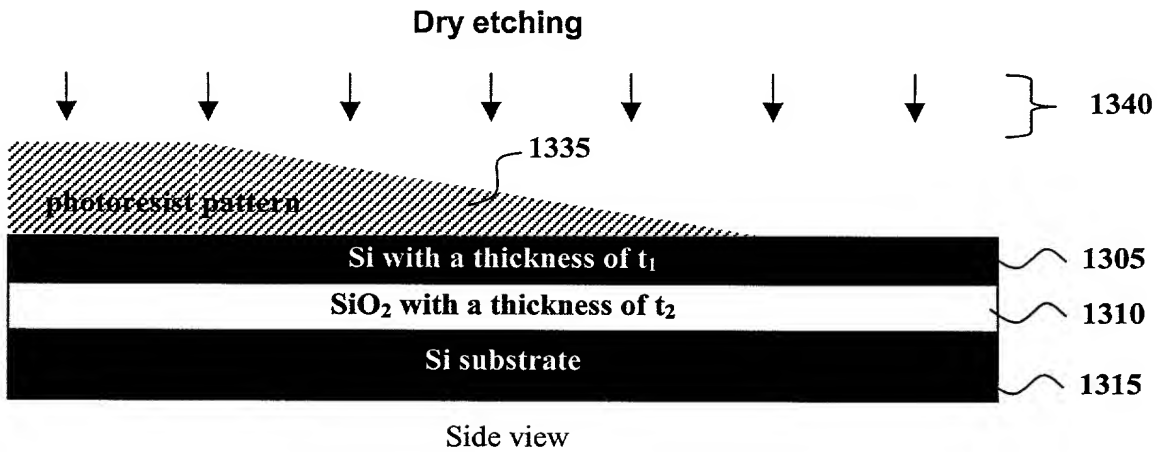


Fig 15B

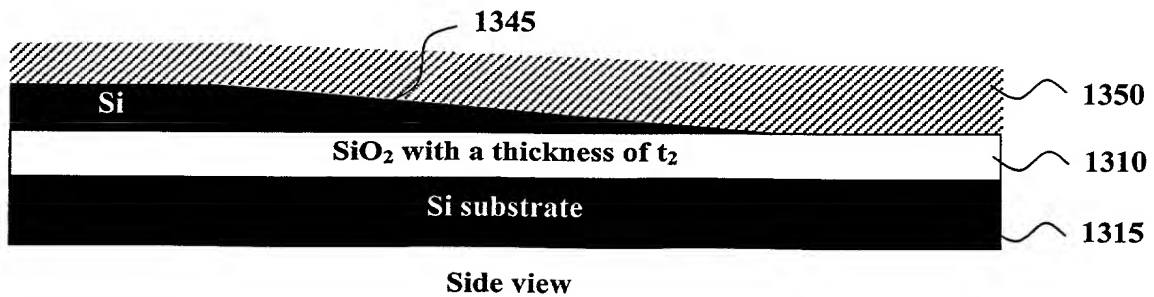


Fig 15C

10083674-101901



FIG. 16

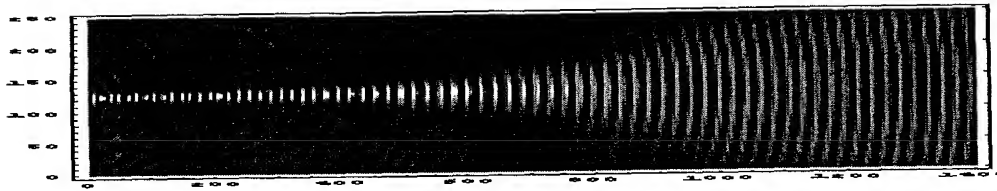


FIG 17

10083674-101901

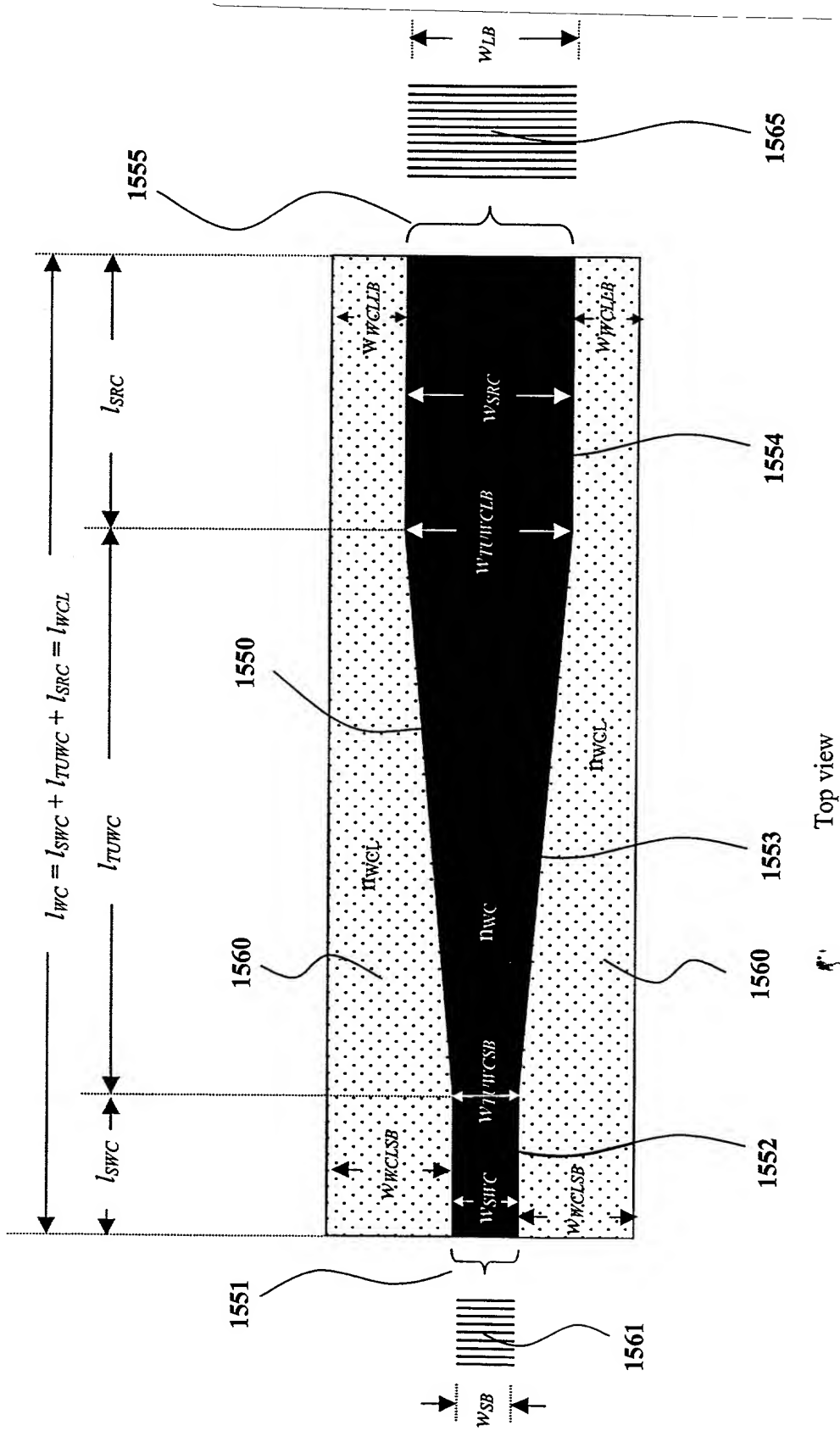


FIG. 19

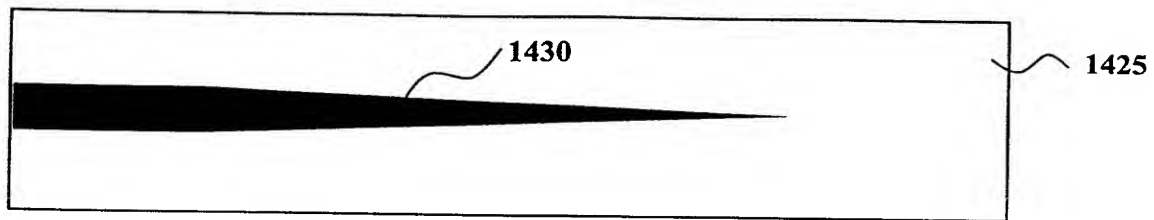


Fig 18A

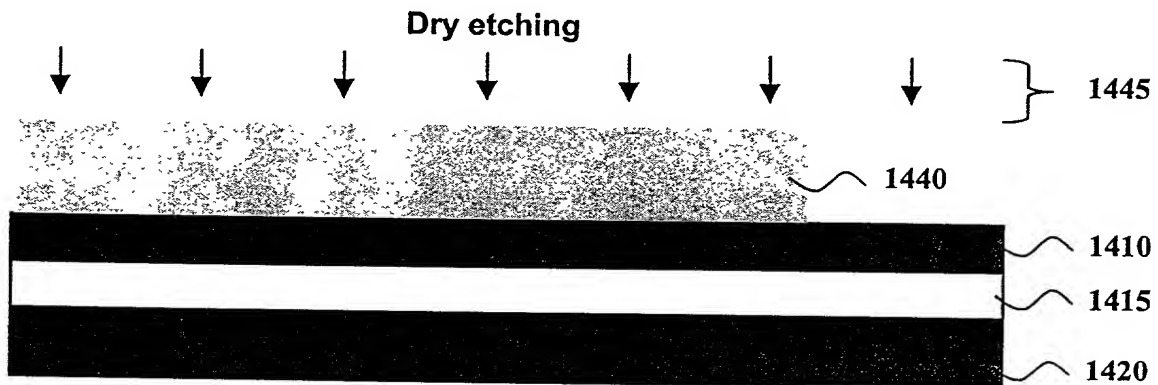


Fig 18B

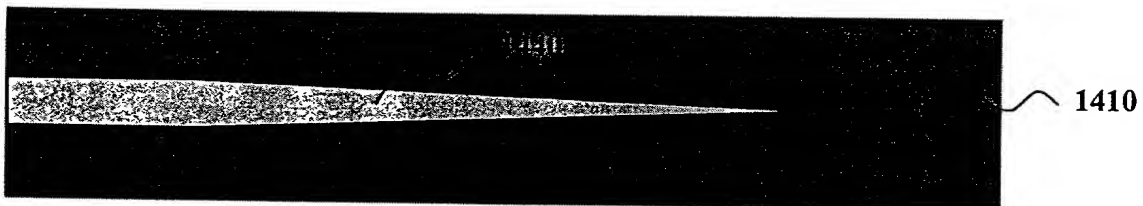


Fig 18C

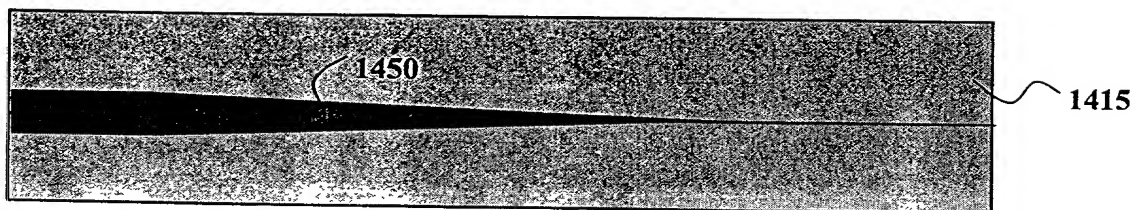


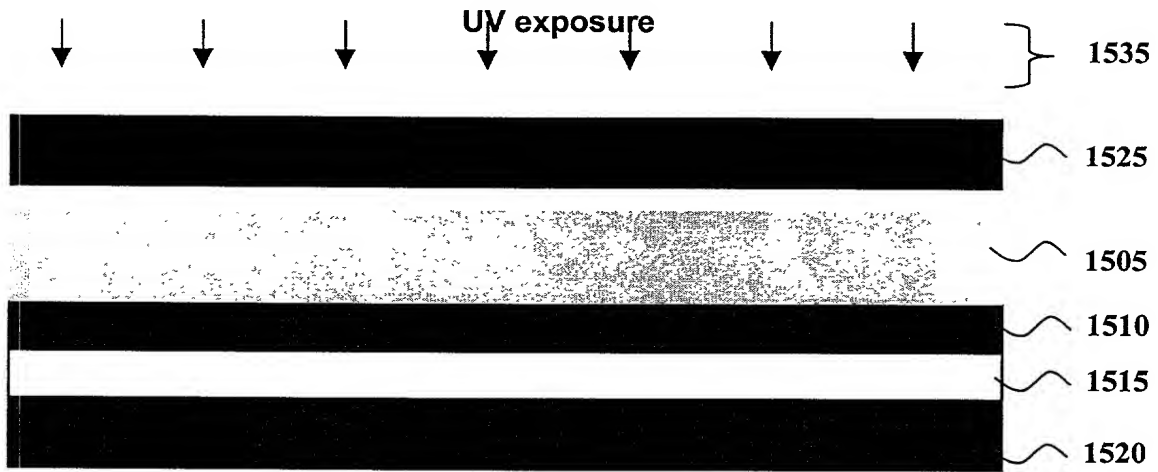
Fig 18D

10083674.101901



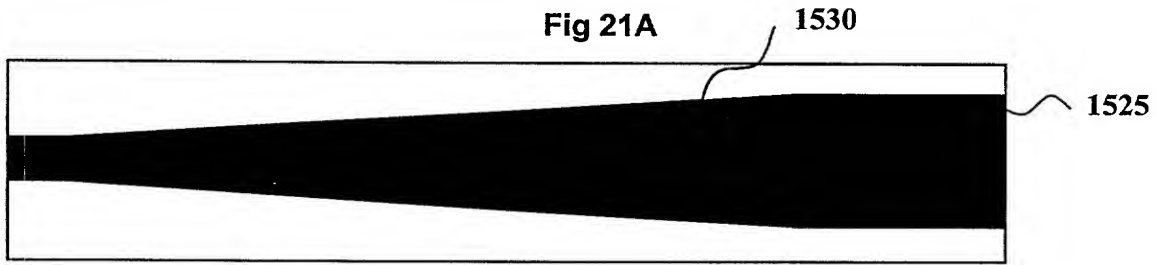
Fig. 20

106T01" 429E800T



Side view

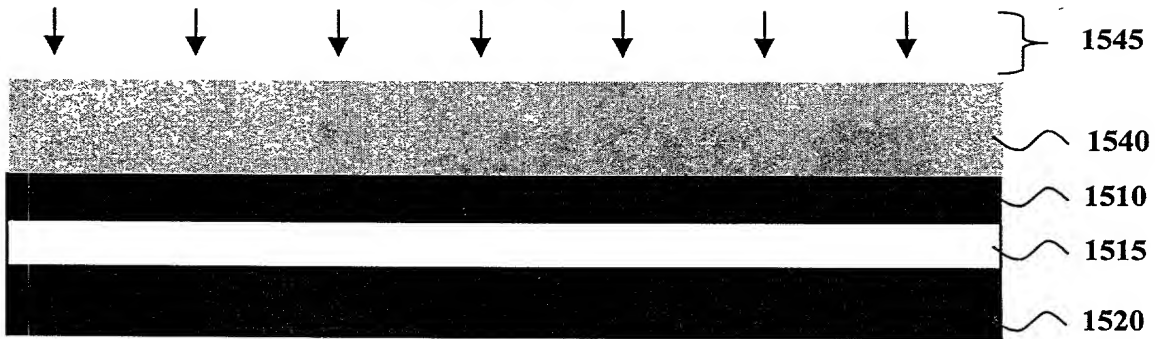
Fig 21A



Mask top view

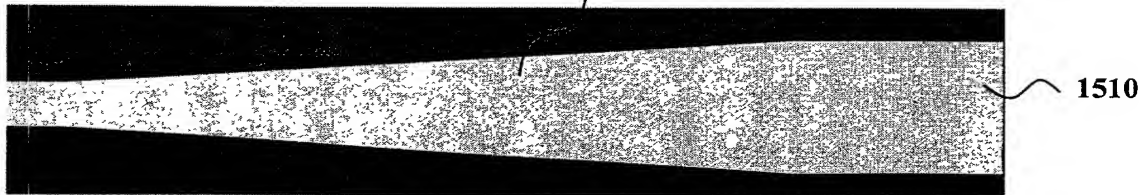
Fig 21B

Dry etching

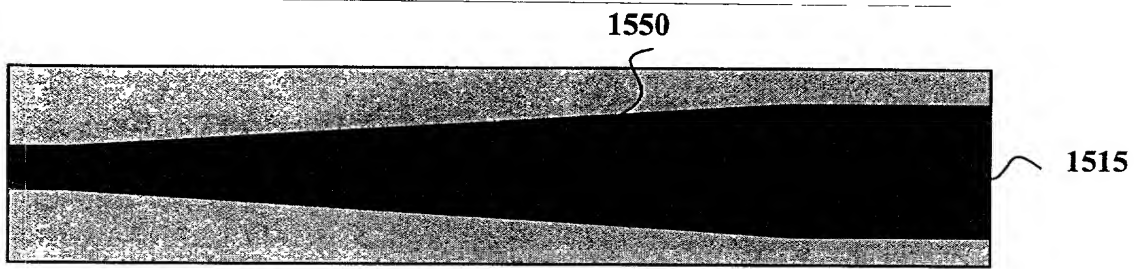


Side view

Fig 21C
1540



Photoresist pattern top view Fig 21D



Si tapered up/wide section top view

FIG. 21E

10033674-101501

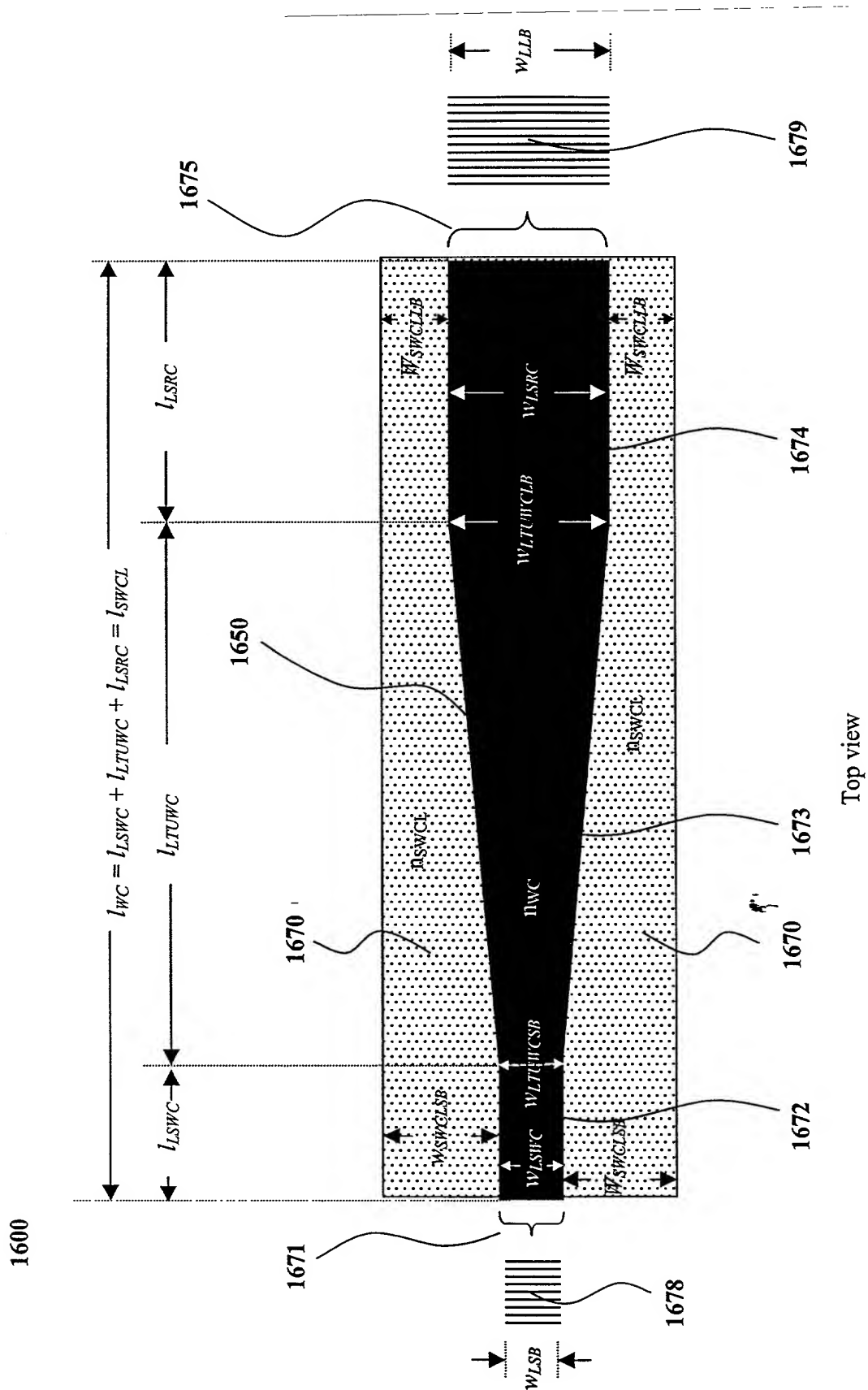


FIG. 22A

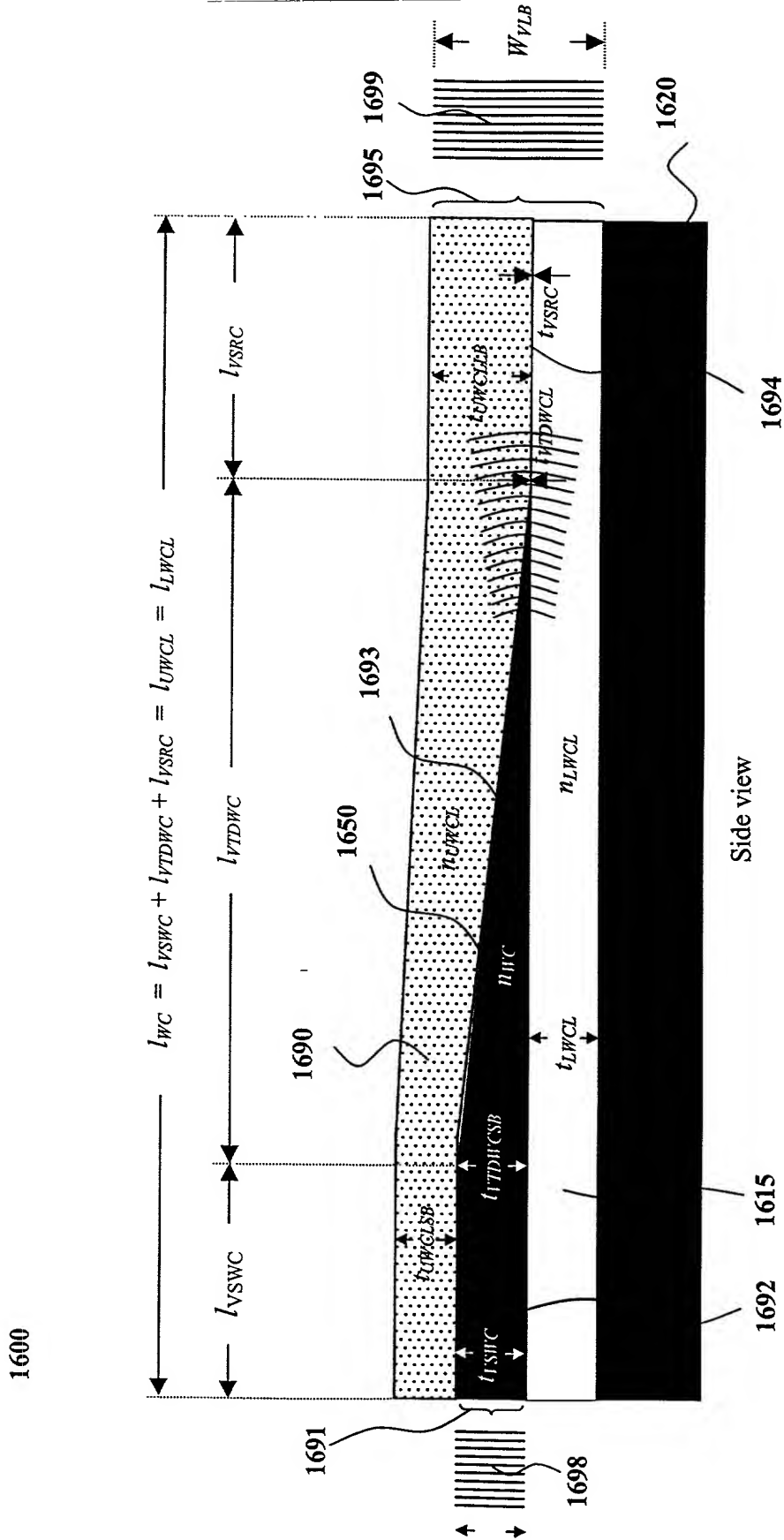
[illegible]

FIG 22B

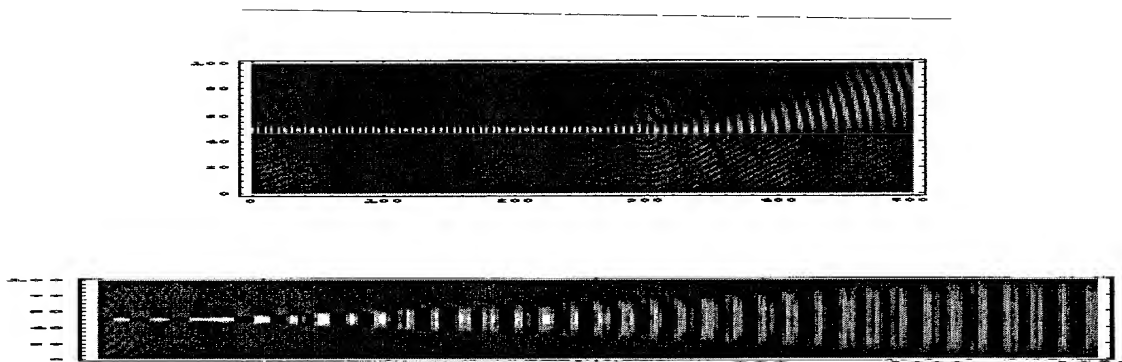
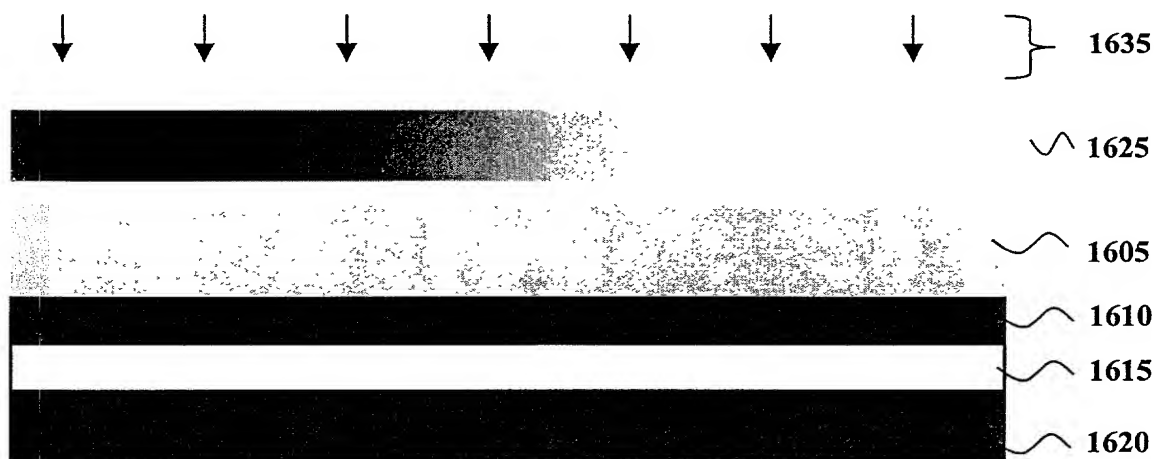
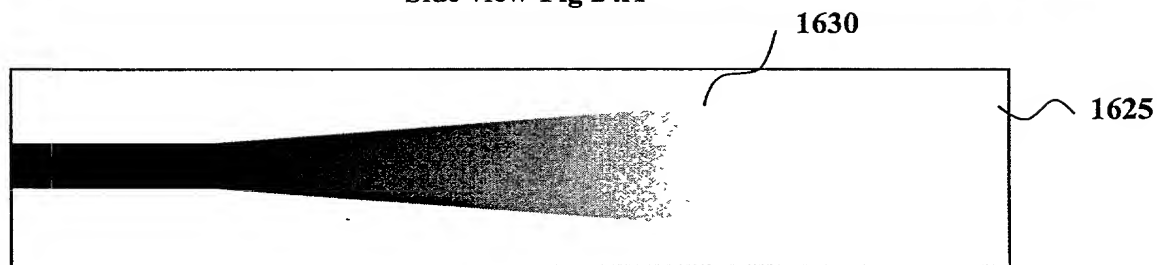


FIG 23

UV exposure

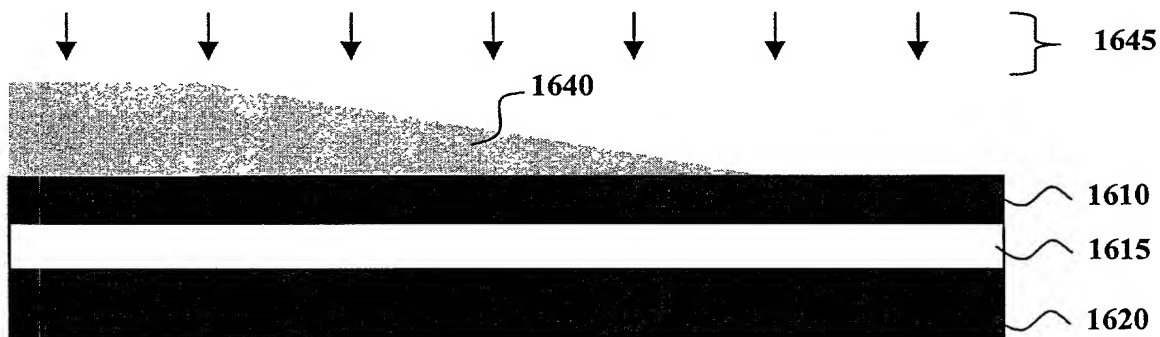


Side view-Fig 24A

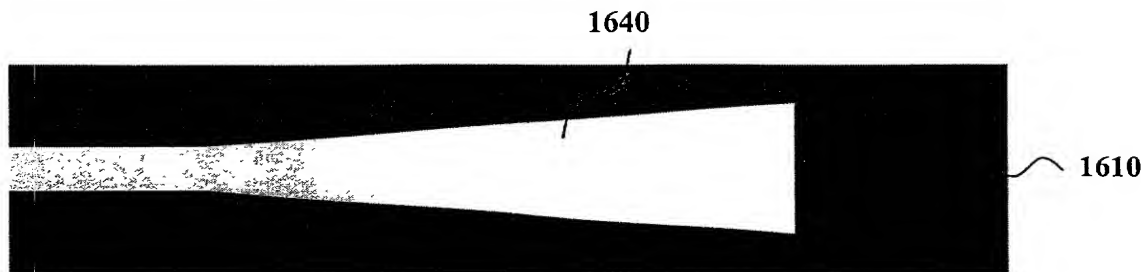


Mask top view-Fig 24B

Dry etching

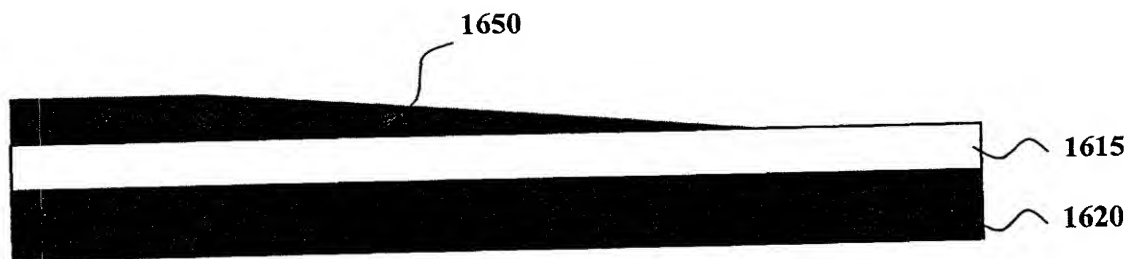


Side view-FIG

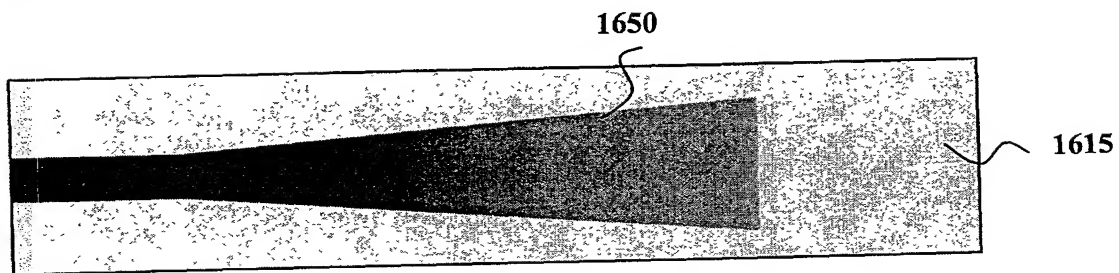


Photoresist pattern top view-FIG24D

100664-106707-4299001



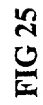
Side view-FIG 24E

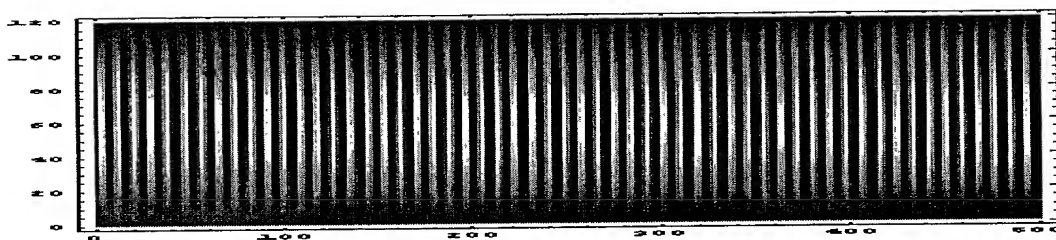


Si tapered up/wide section top view

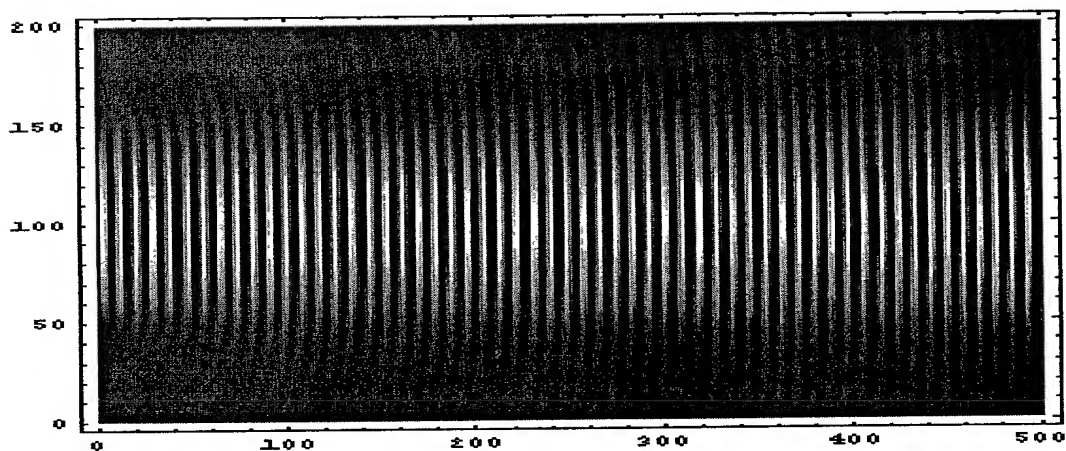
FIG. 24F

FIG. 24F





side view



top view

FIG 26

105T01-4/9E800F

Fig 27A

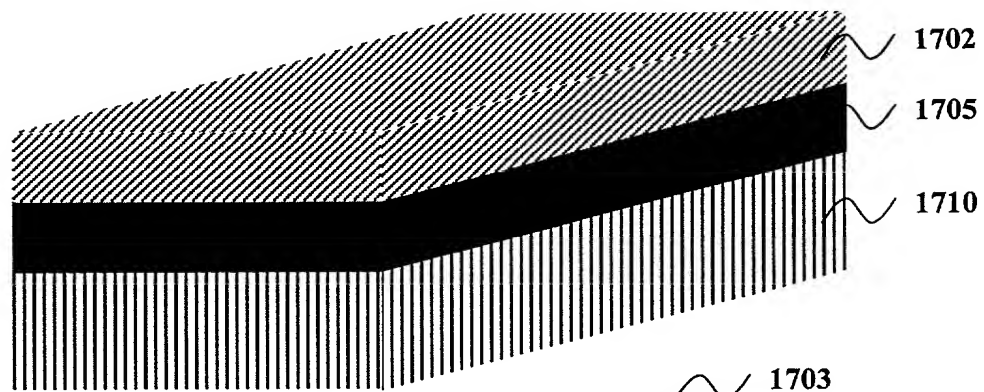


Fig 27B

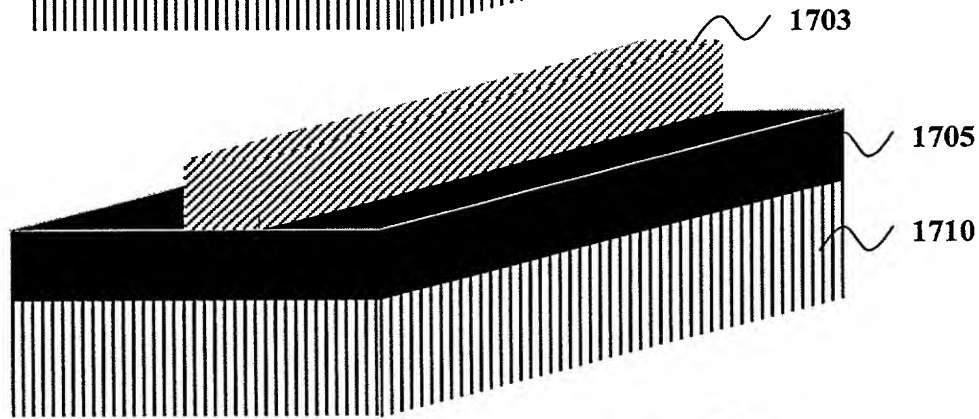


Fig 27C

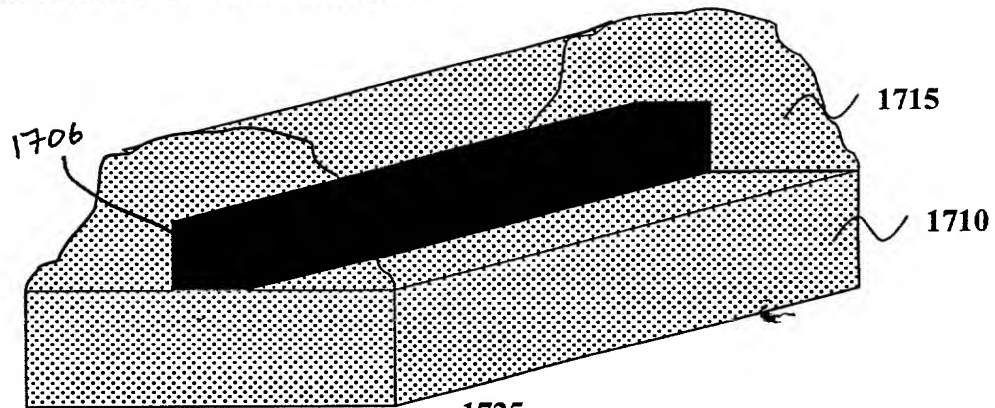
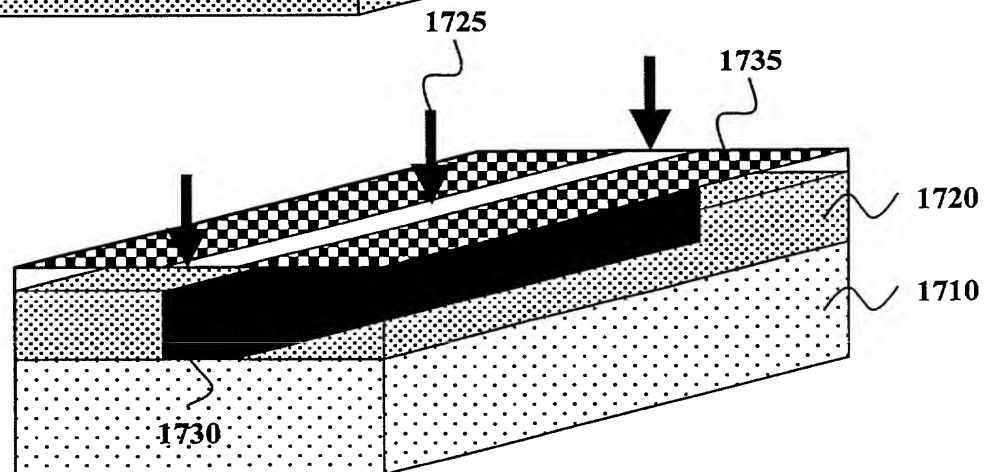


Fig 27D



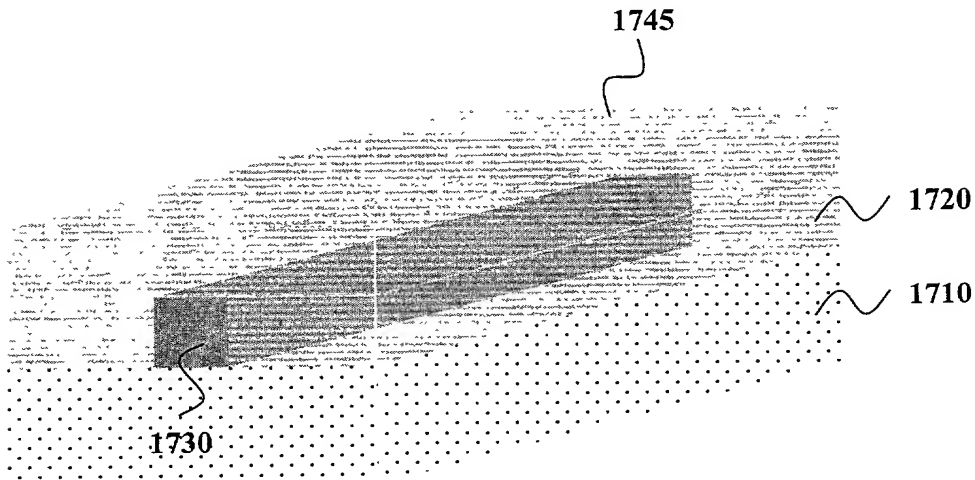


FIG. 27E

FIG. 27E

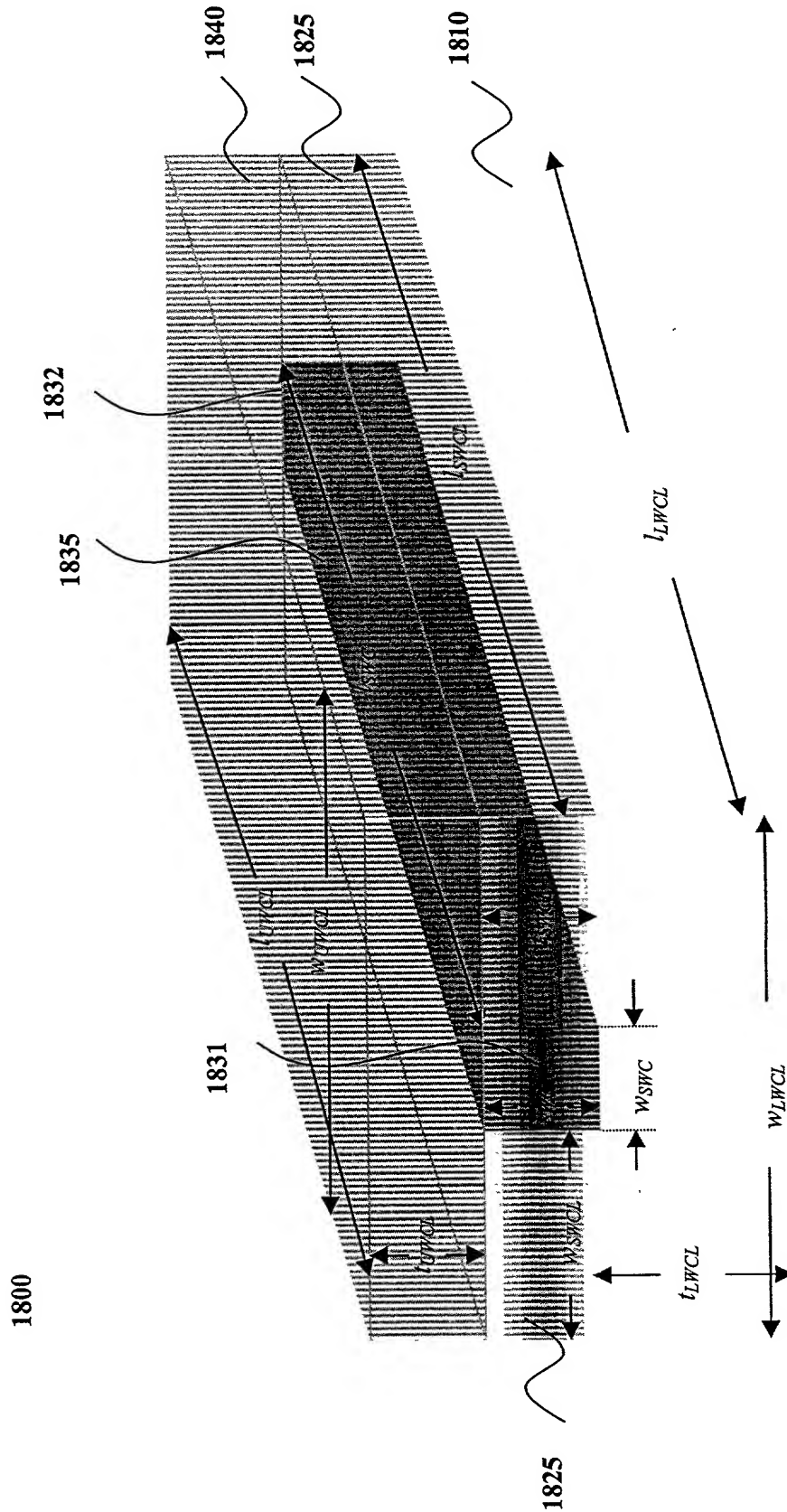
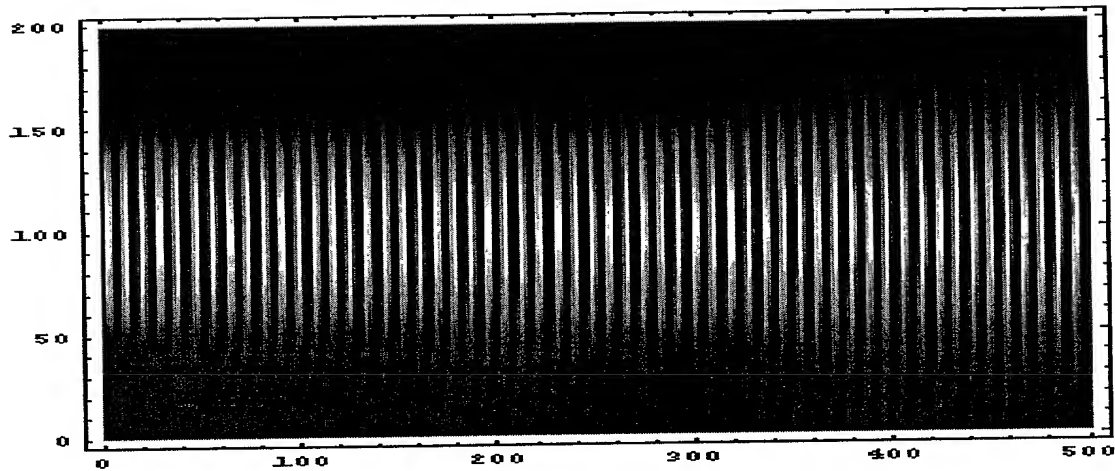
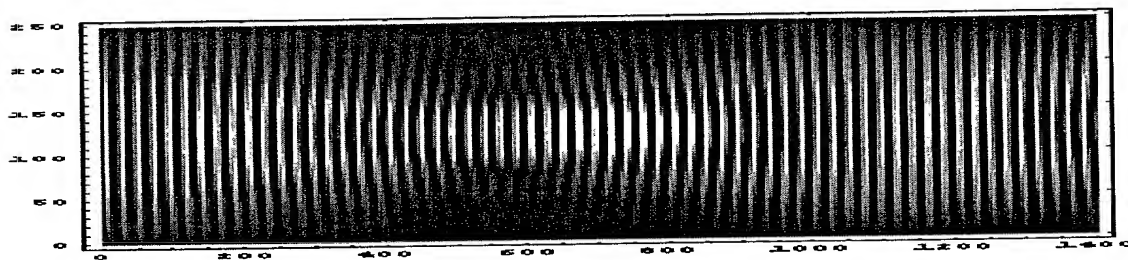


FIG 28



top view



side view

Fig 29

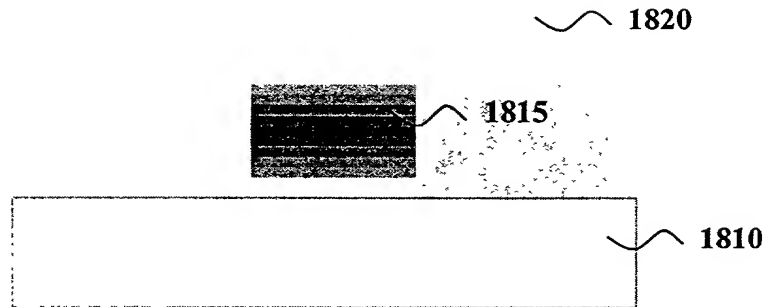
10063674-101901

FIG 30A



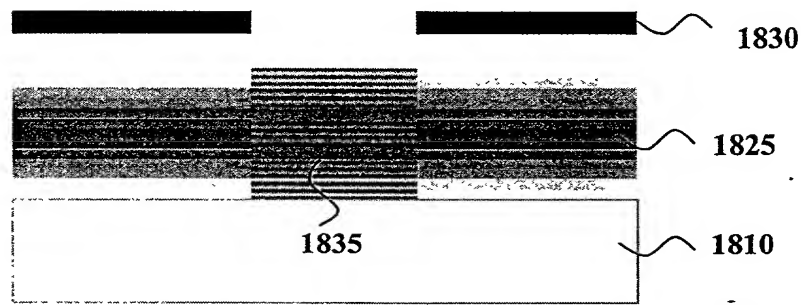
Cross sectional view

FIG 30B



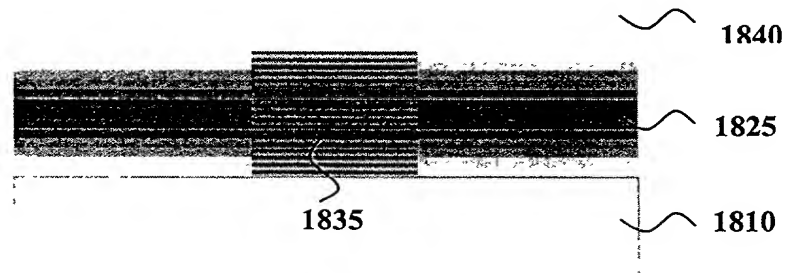
Cross sectional view

FIG 30C



Cross sectional view

FIG 30D



Cross sectional view

1008674-10191
105107-429800T

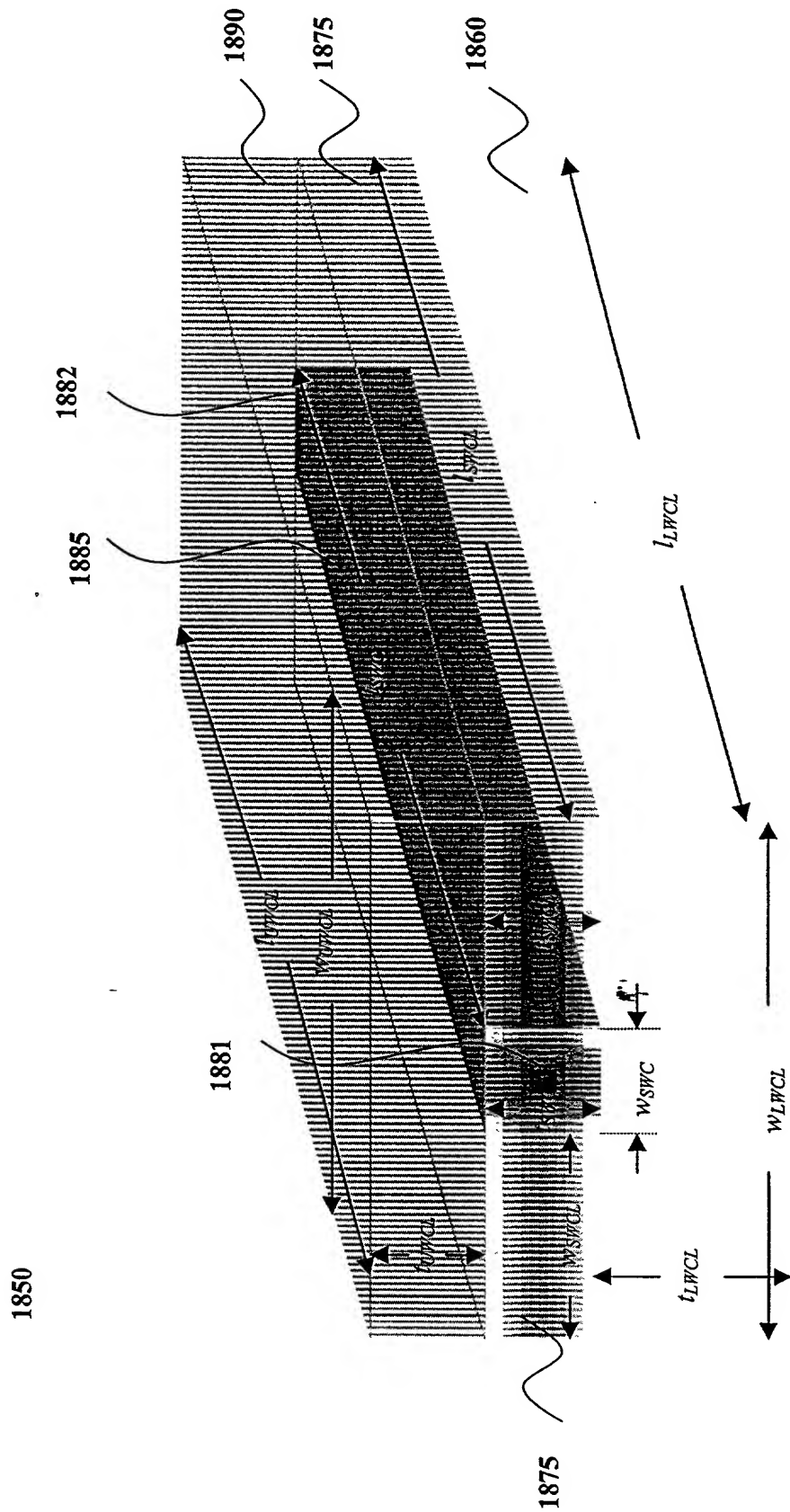
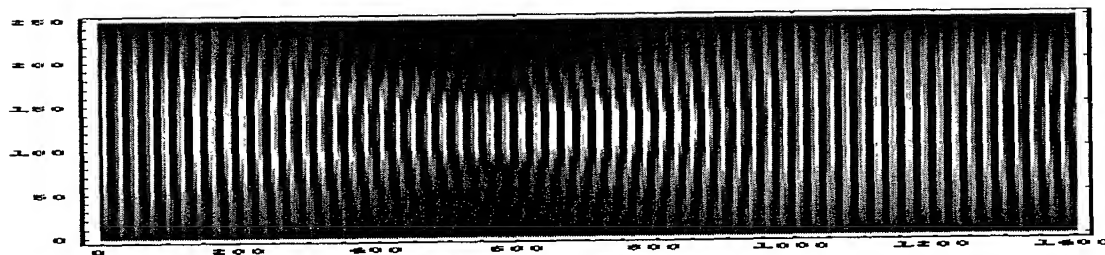
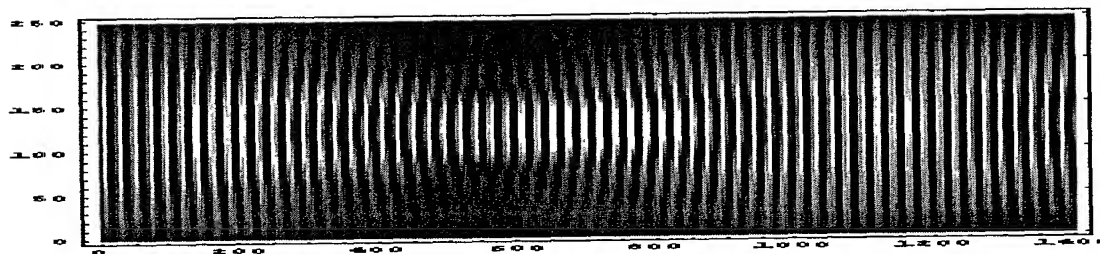


FIG 31



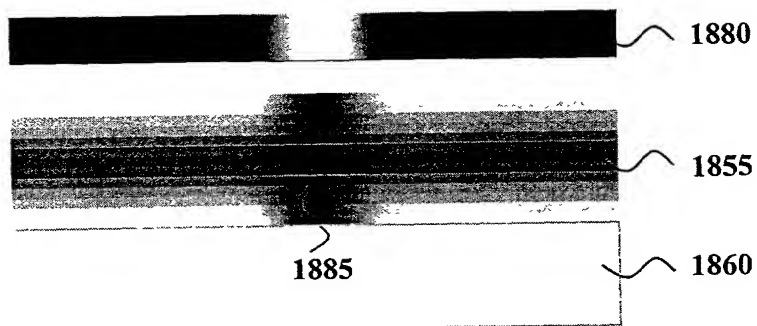
top view



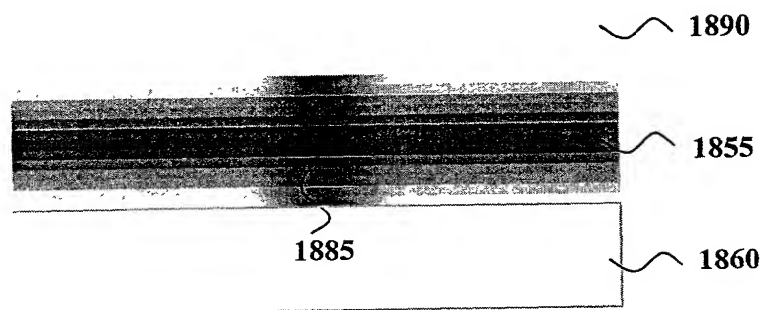
side view

Fig 32

FIG. 32



Cross sectional view
FIG 33A

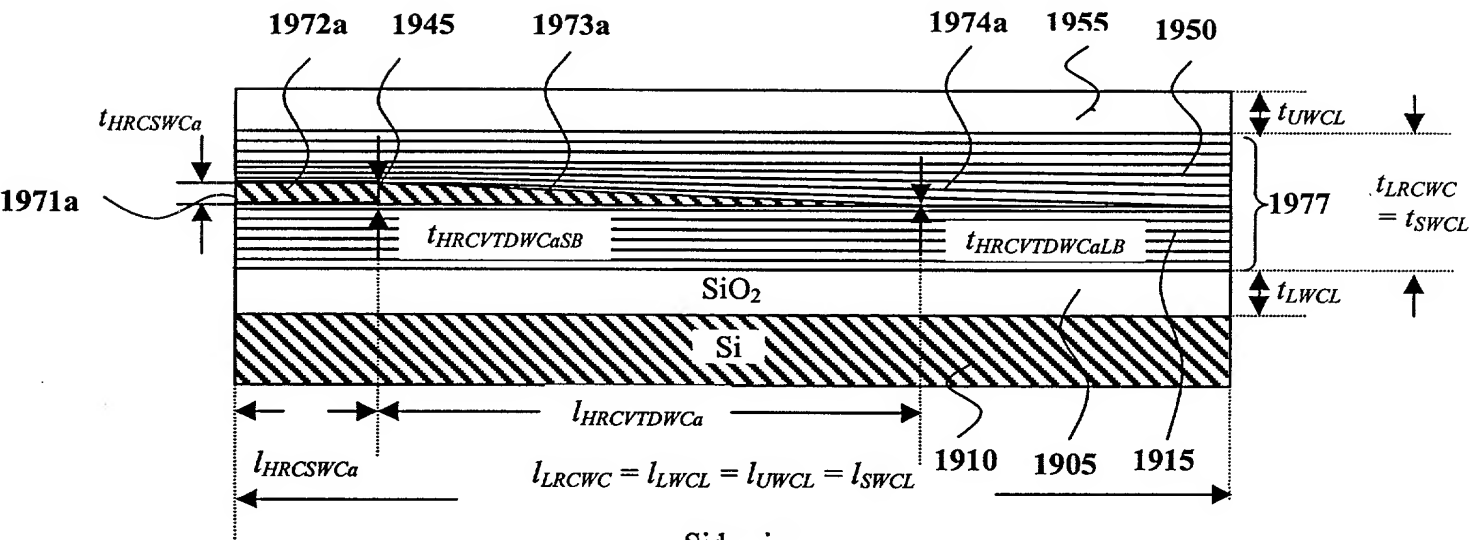


Cross sectional view

FIG. 33B

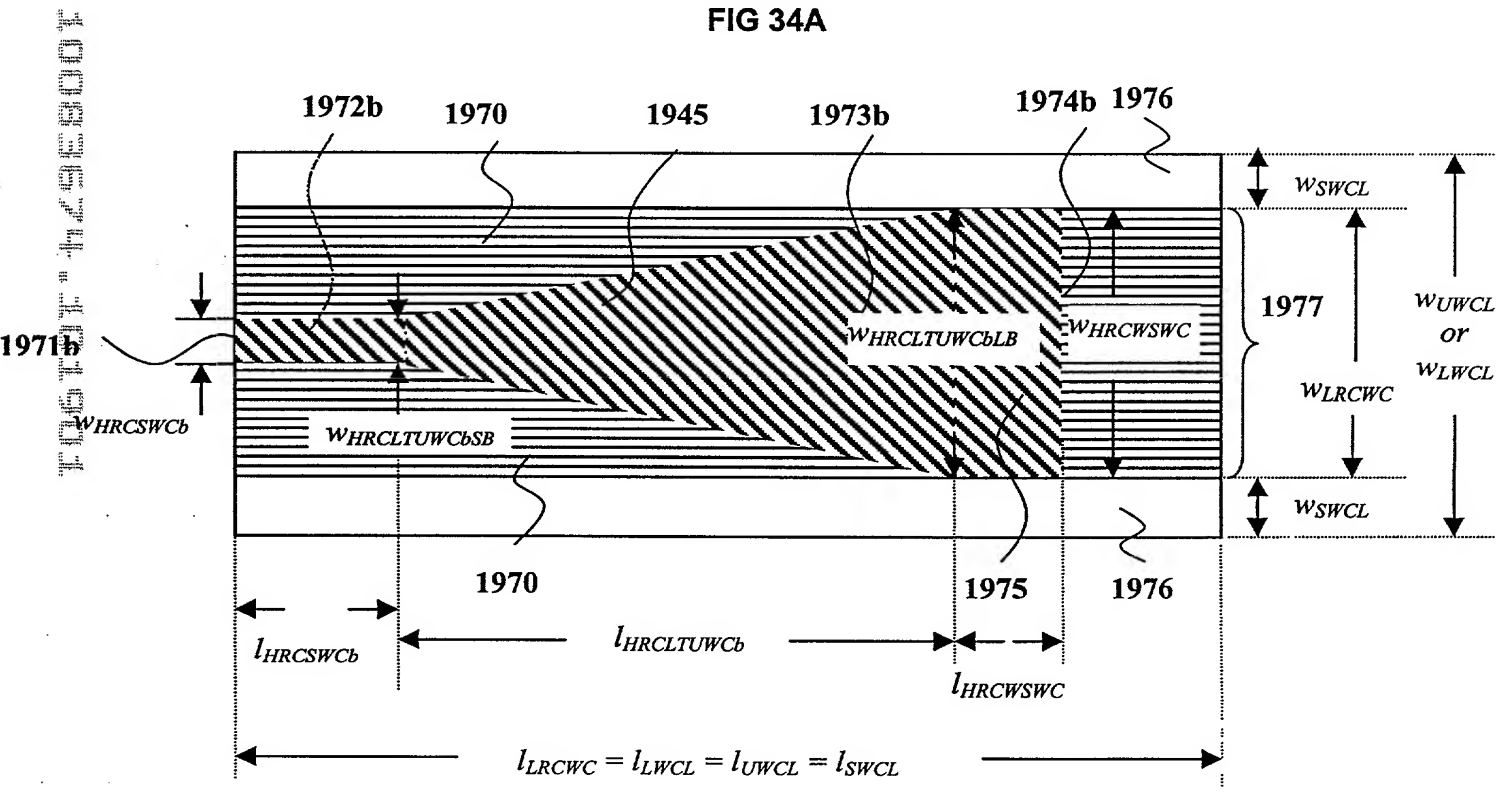
1003674-104901
TOP OF SHEET

1900



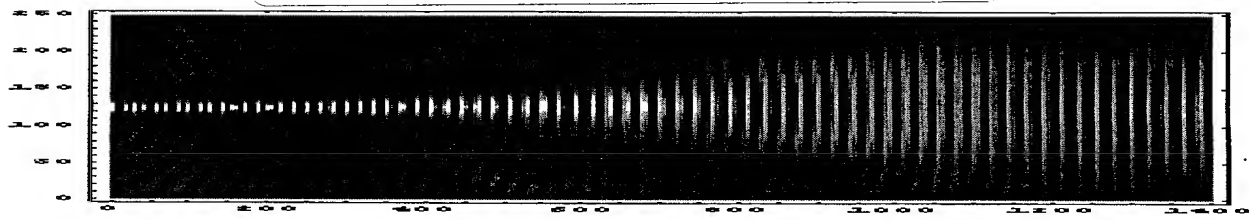
Side view

FIG 34A



Top view

FIG 34B



Side view



Top view

Fig 35

1003674-101901

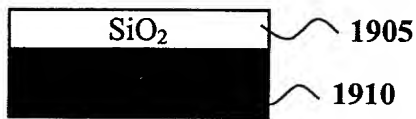


FIG 36A

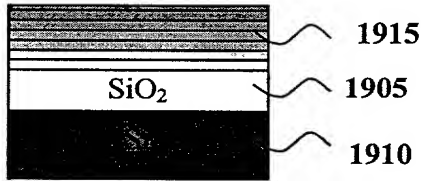


FIG 36B

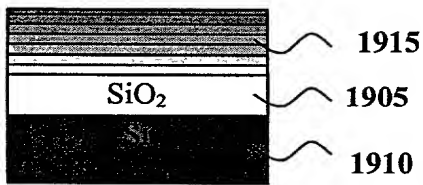


FIG 36C

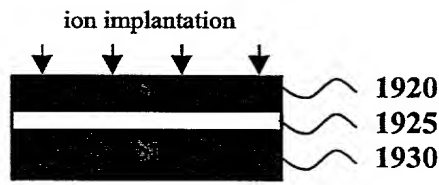


FIG 36D

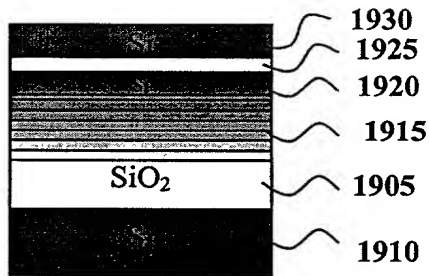


FIG 36E

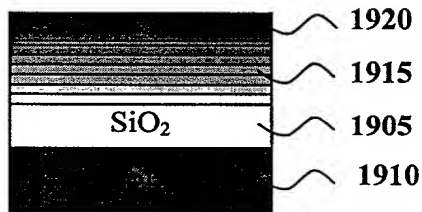
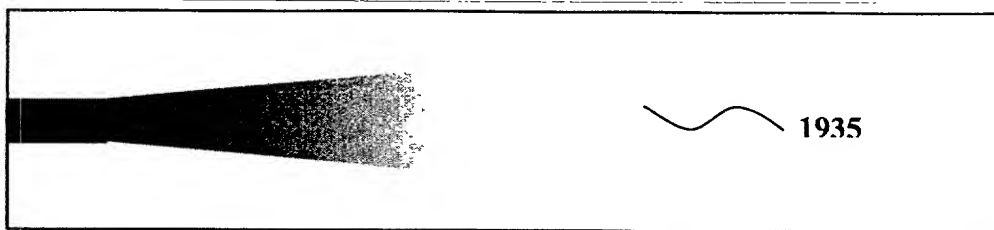
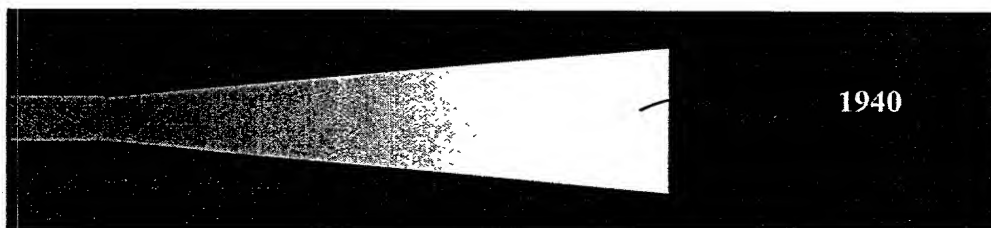


FIG 36F

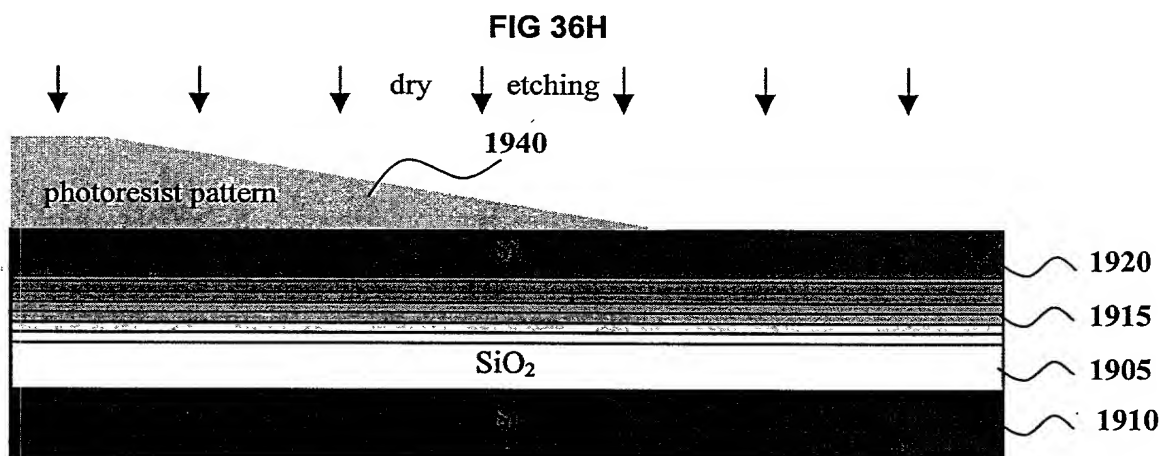
FIG 36A



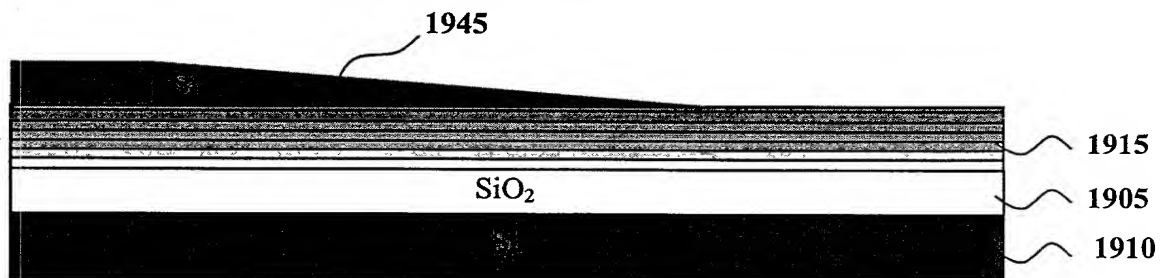
Mask top view



photoresist pattern top view

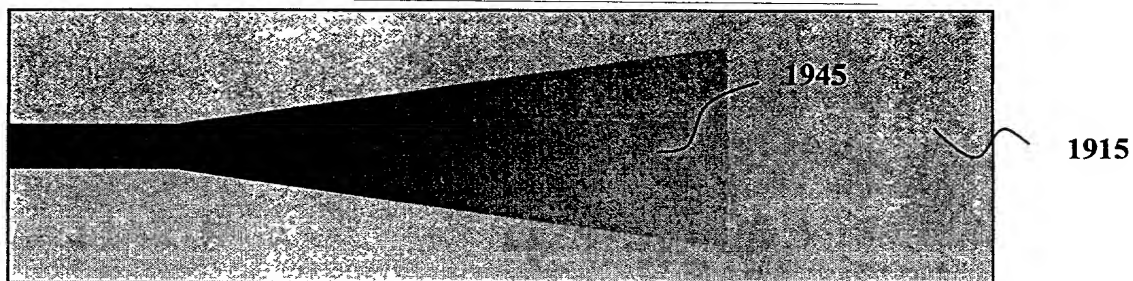


Side view

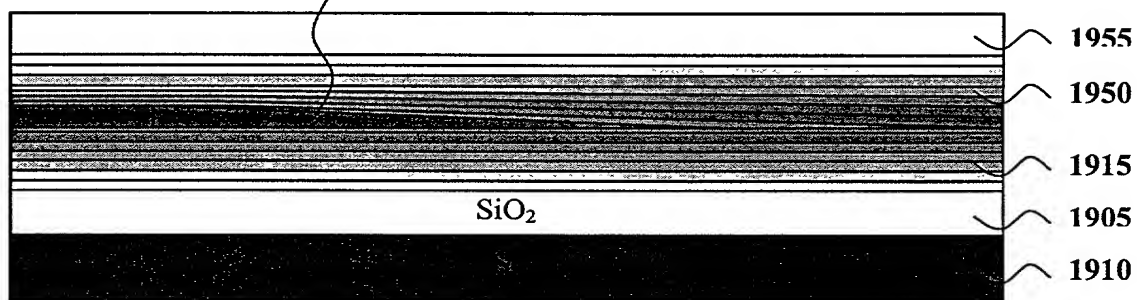


Side view

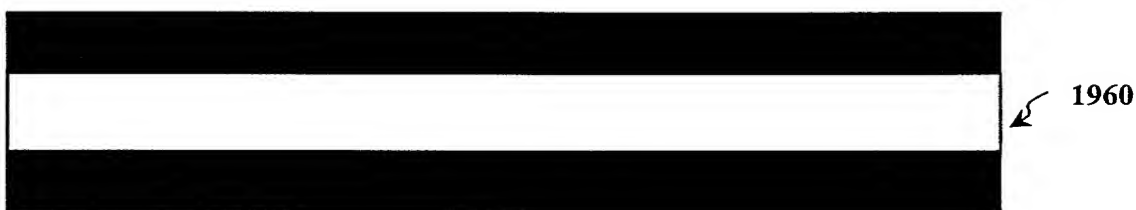
1065101-498801



Top view
 FIG 36K

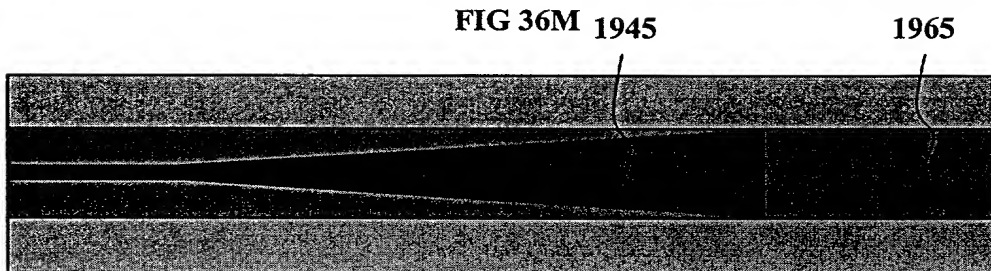


Side view
 FIG 36L



mask

FIG 36M



Top view
 FIG. 36N

1008674-1001

2000

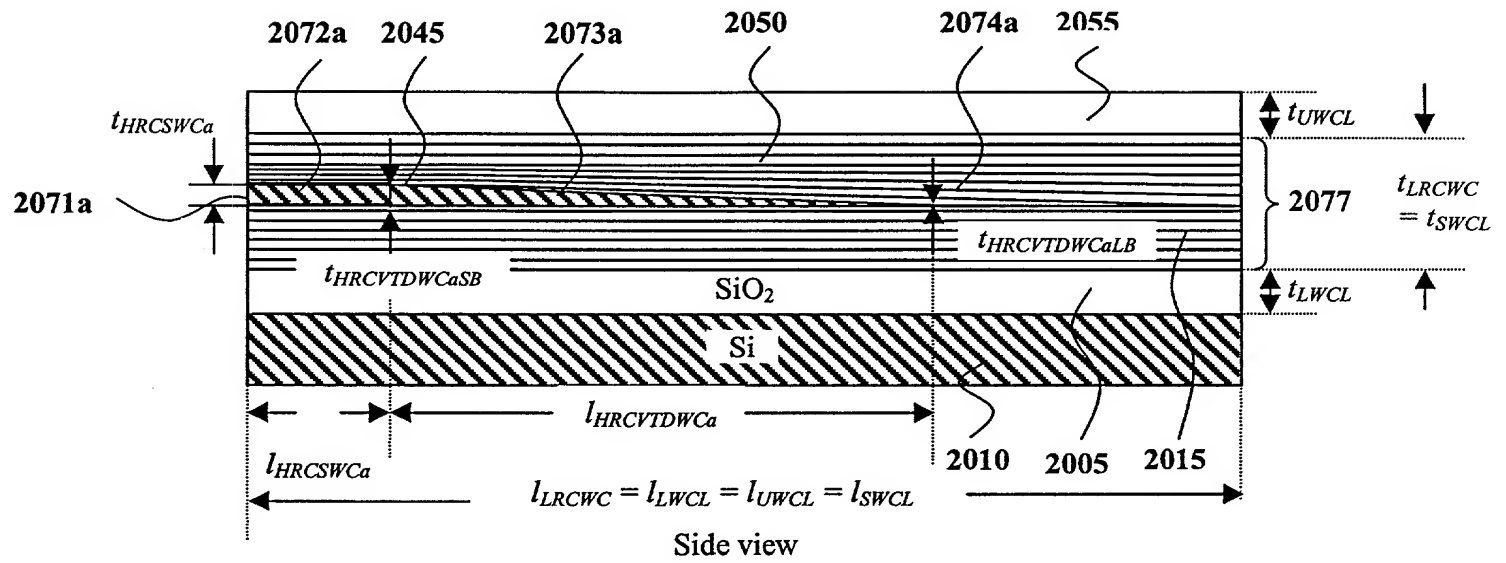


FIG 37A

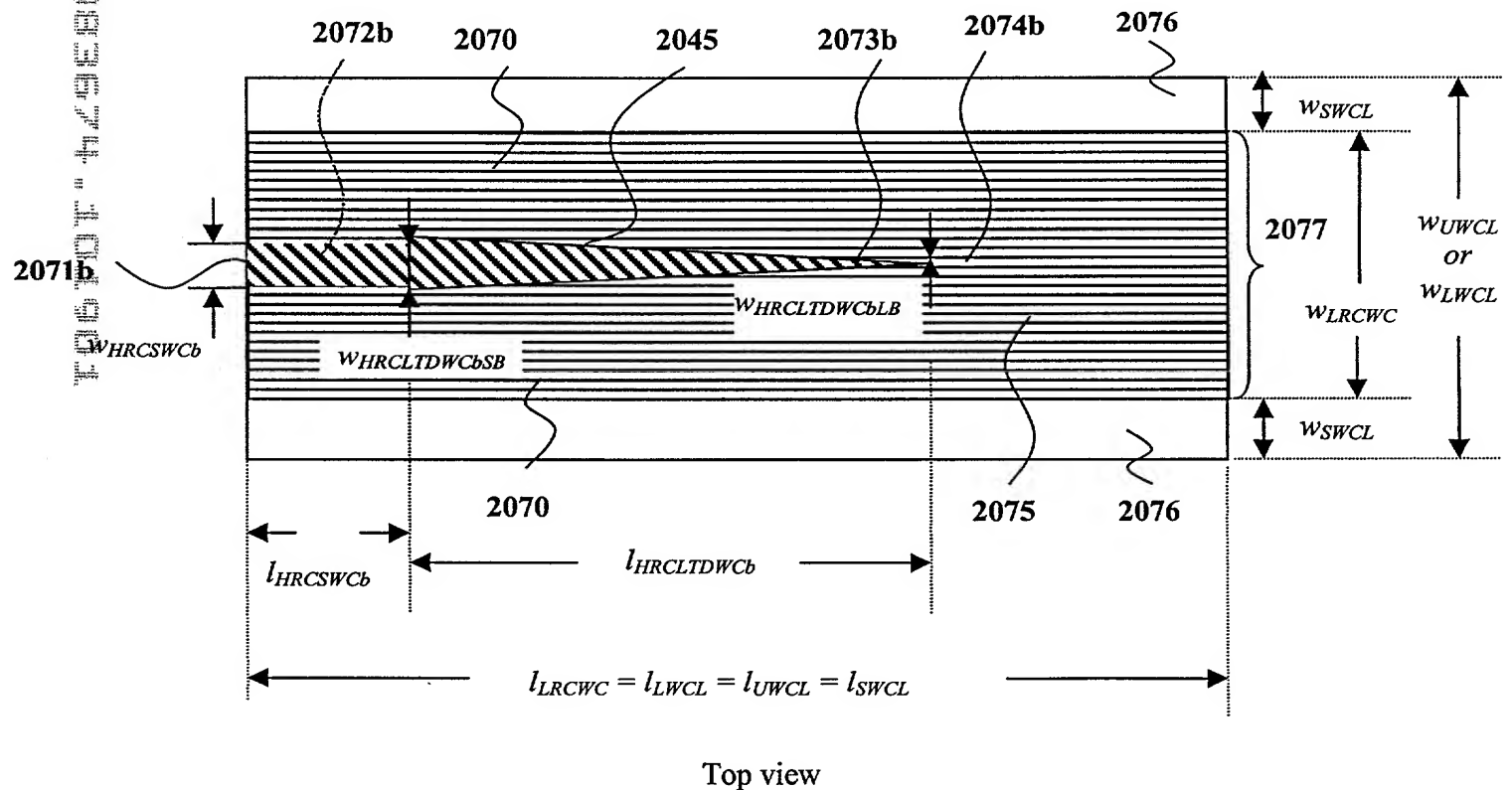


FIG 37B

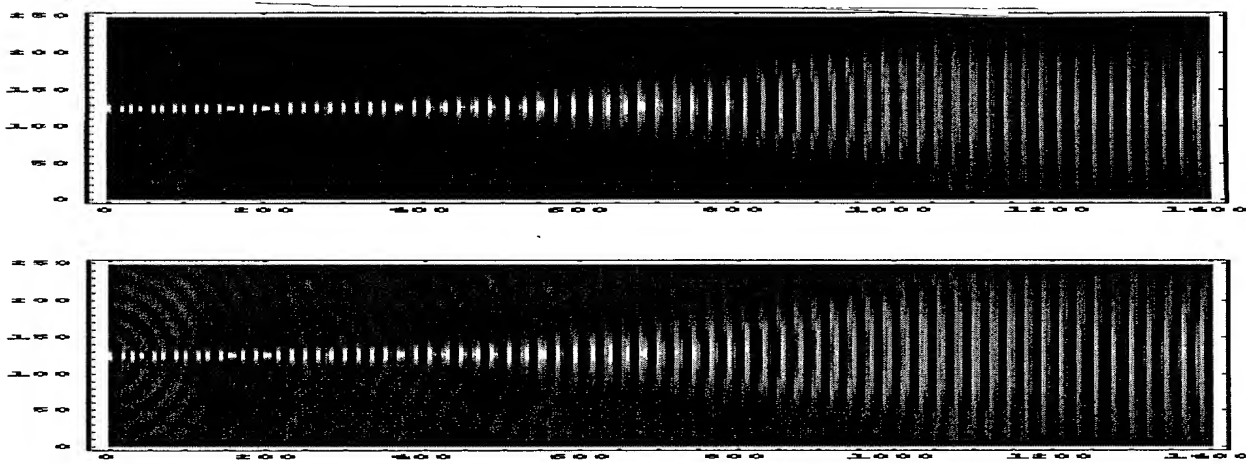


Fig 38

10083674-101501

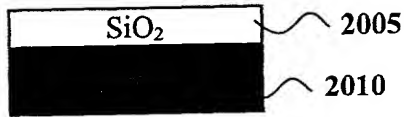


FIG 39A

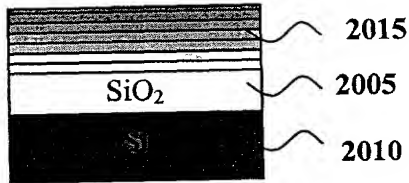


FIG 39B

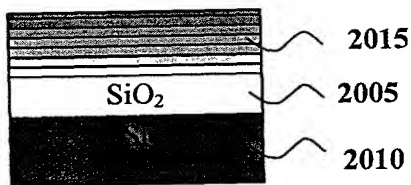


FIG 39C

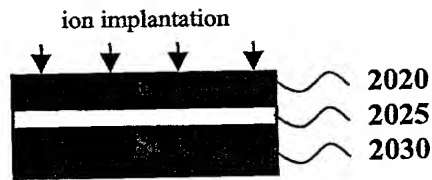


FIG 39D

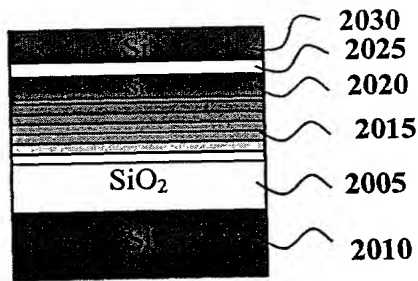


FIG 39E

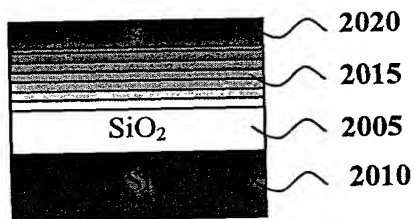
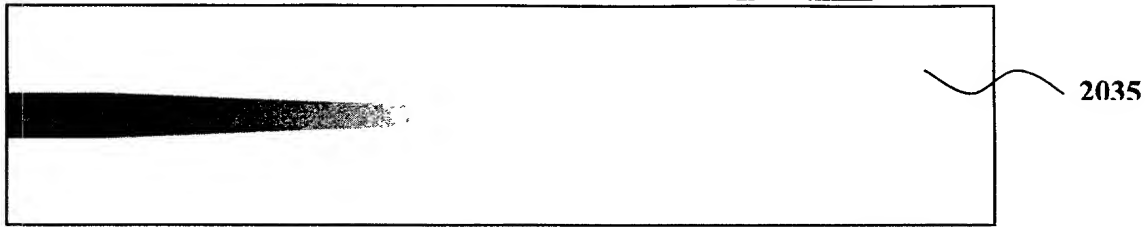


FIG 39F

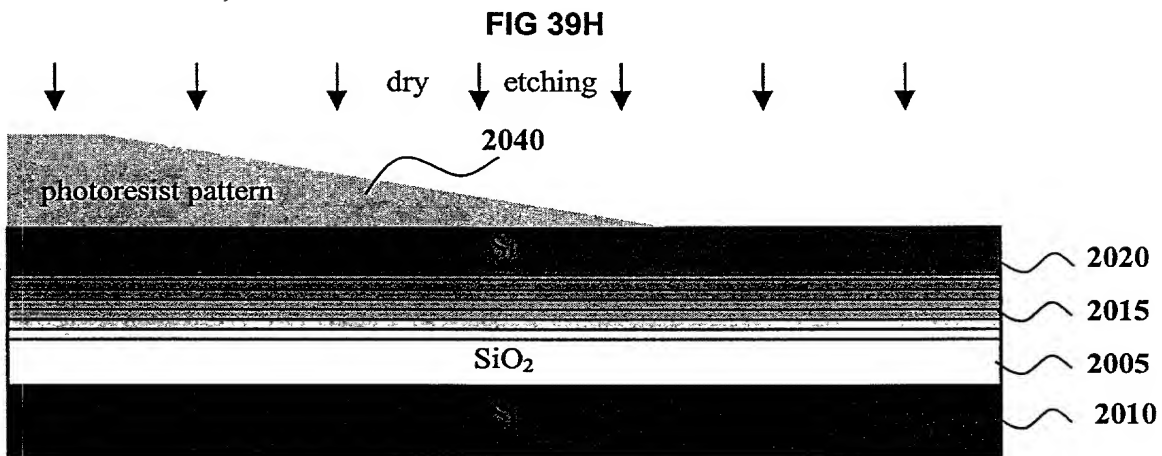
FIG 39A



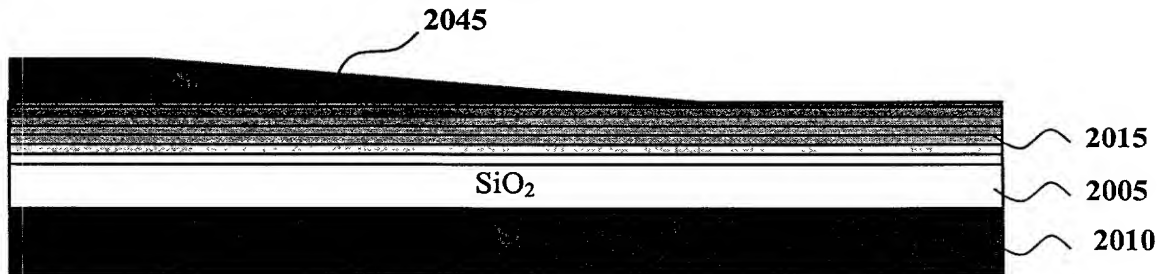
Mask top view
FIG 39G



photoresist pattern top view
FIG 39H

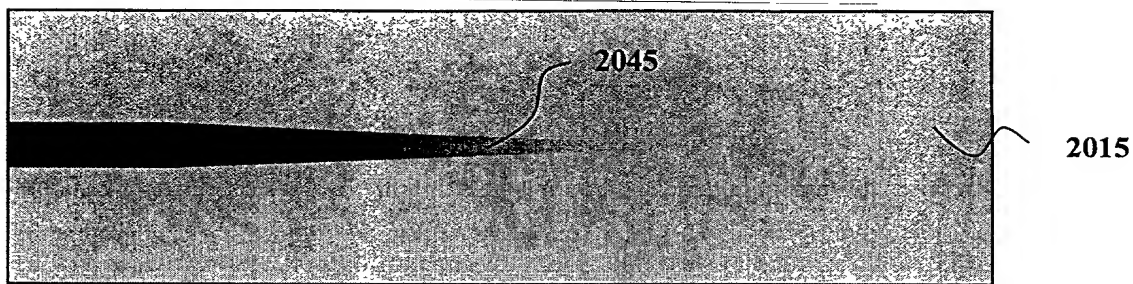


Side view
FIG 39I

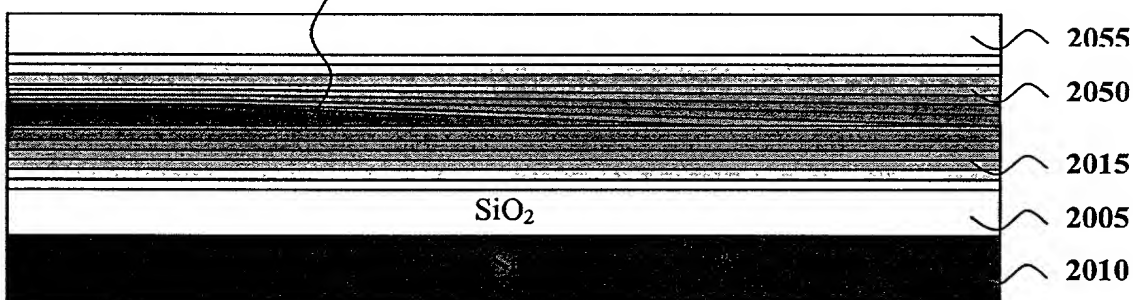


Side view
FIG 39J

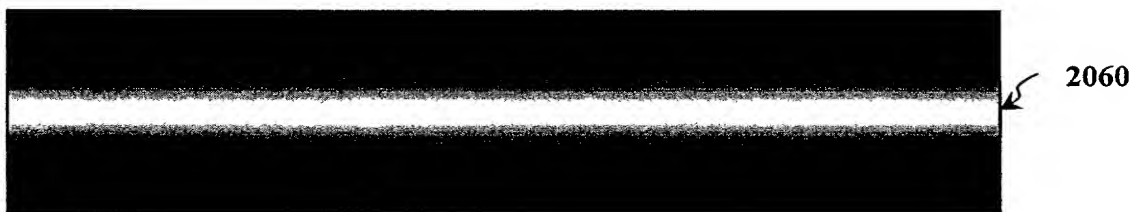
1008964-1001



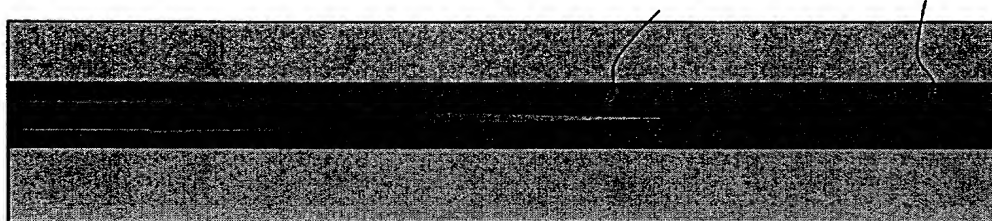
Top view
 FIG 39K



Side view
 FIG 39L



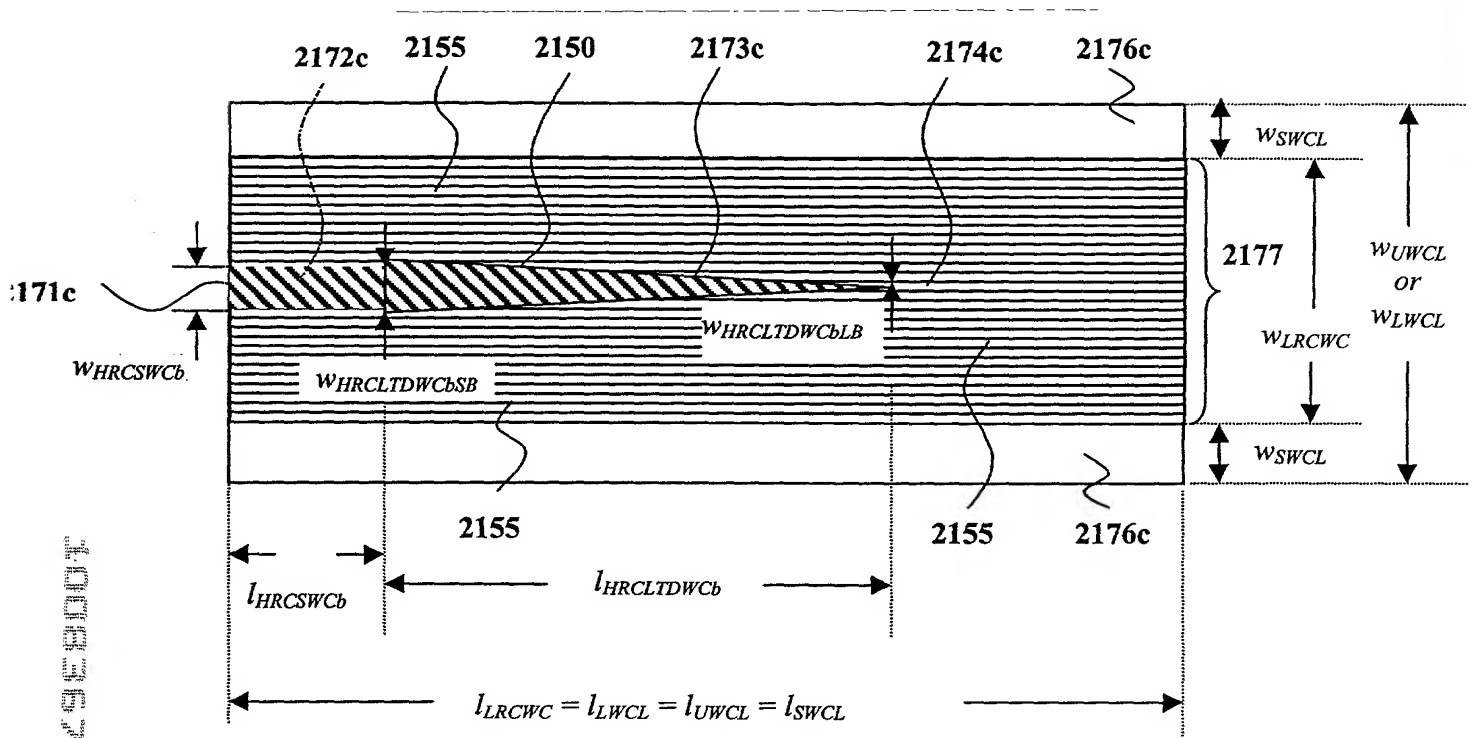
mask
 FIG 39M



Top view
 FIG. 39N

10033674-10033674

FIG 40B

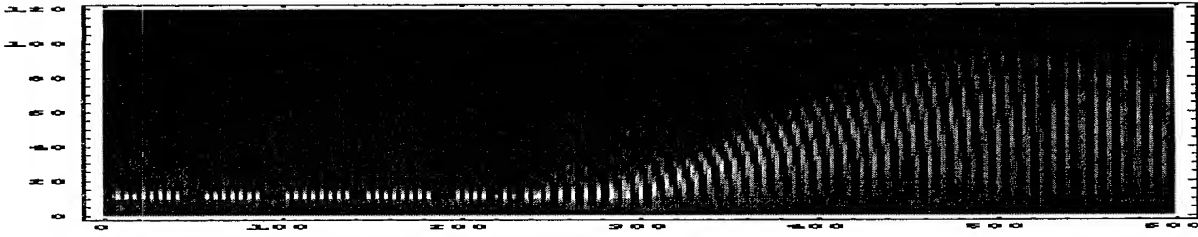


Top view

FIG 40C

FIG 40C

Taper side launching



GRIN guide side launching

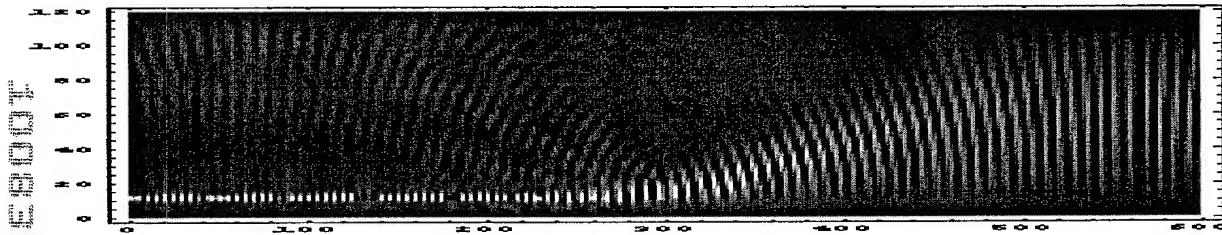


Fig 41

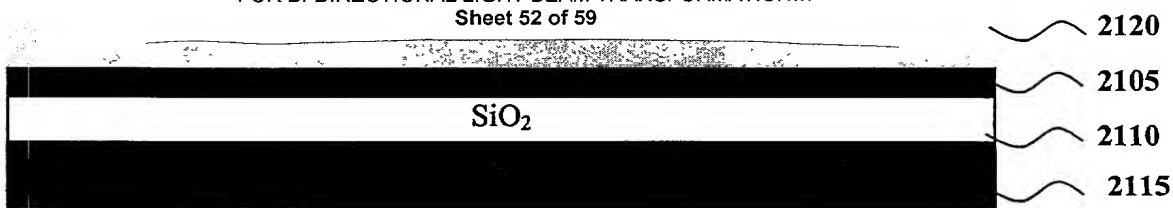
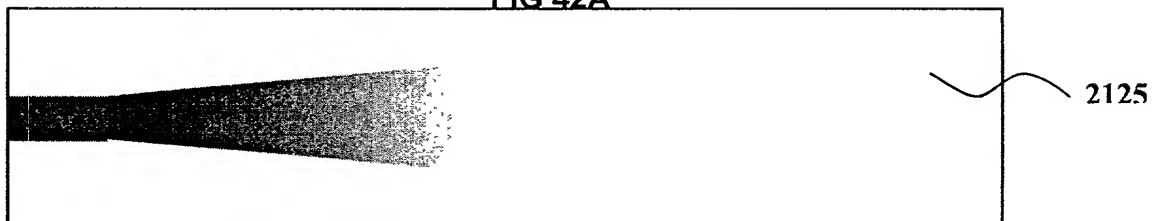
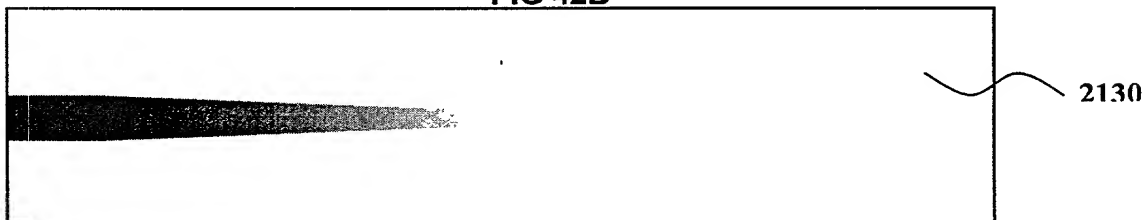


FIG 42A



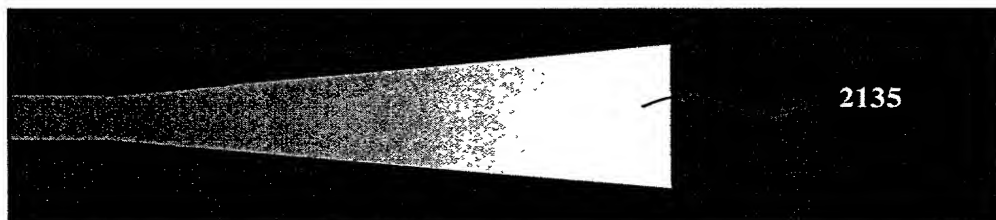
Mask top view

FIG 42B



Mask top view

FIG 42C



photoresist pattern top view

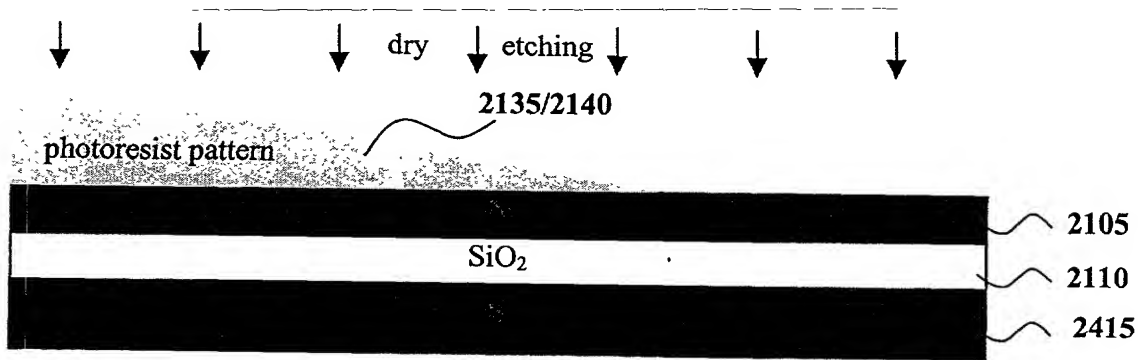
FIG 42D



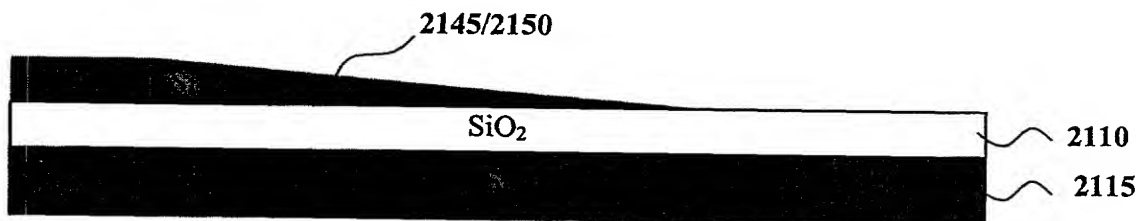
photoresist pattern top view

FIG 42E

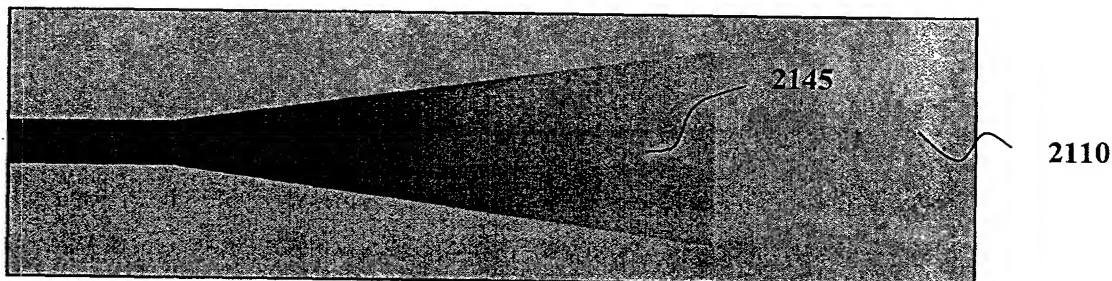
100364-10101-1298001



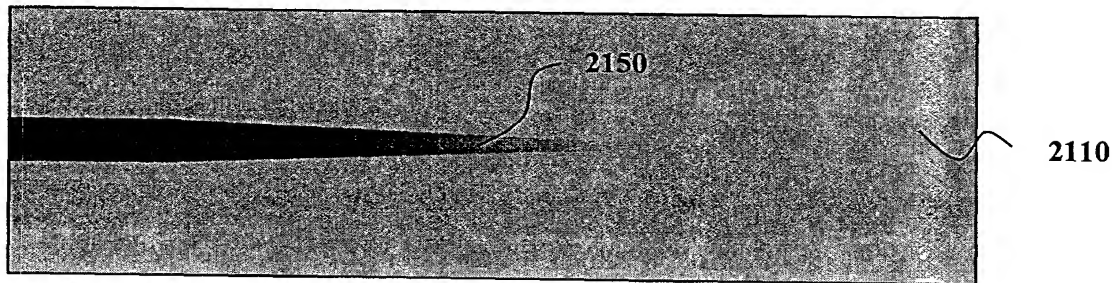
Side view FIG 42F



Side view FIG 42G



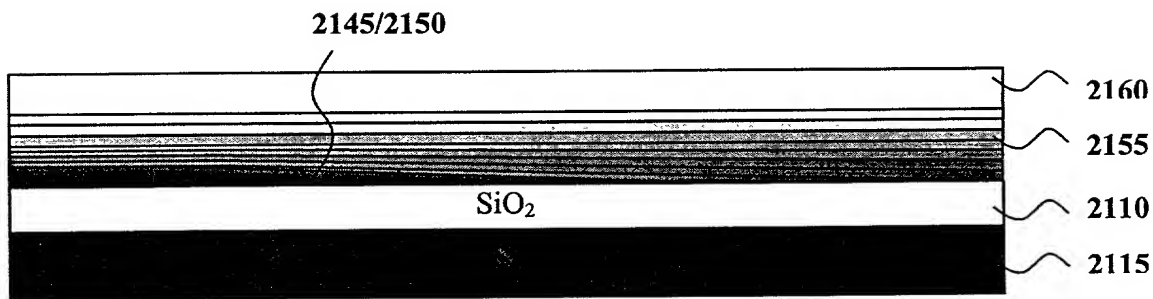
Top view FIG 42H



Top view

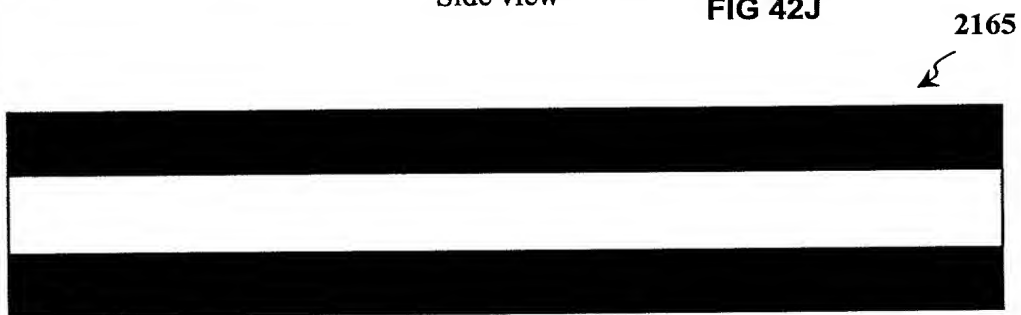
FIG 42I

FIG 42F, FIG 42G, FIG 42H, FIG 42I



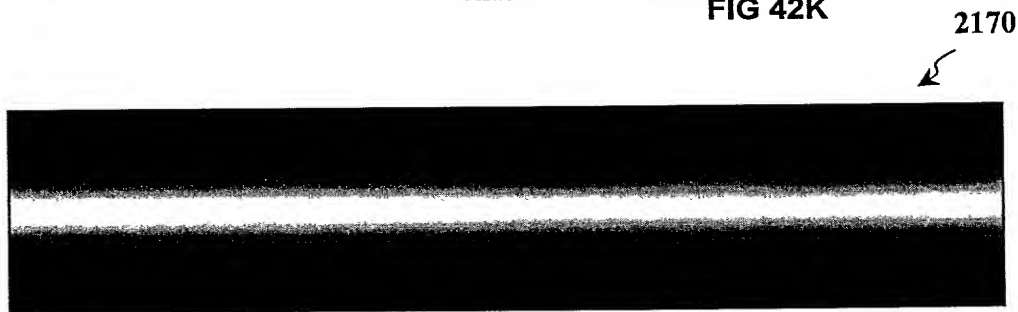
Side view

FIG 42J



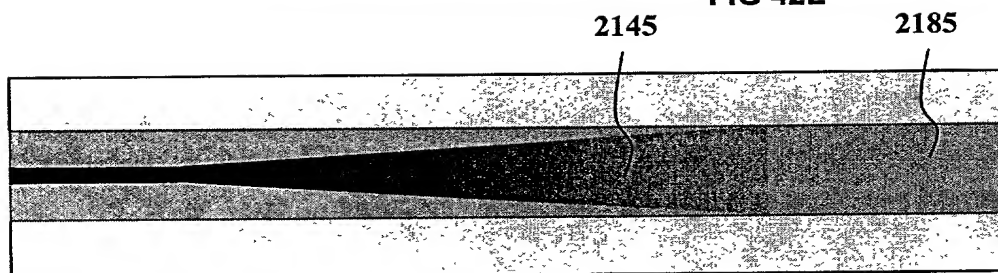
mask

FIG 42K



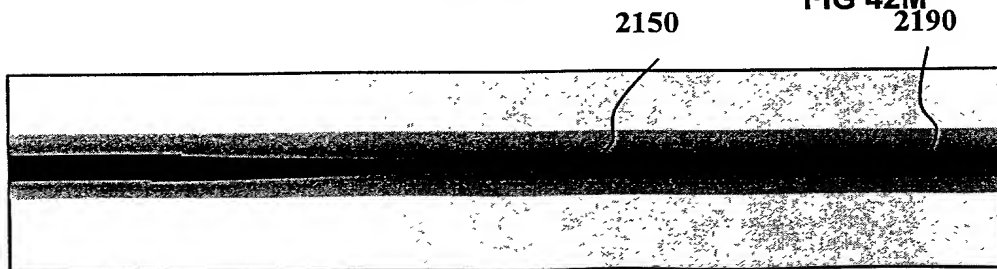
mask

FIG 42L



Top view

FIG 42M



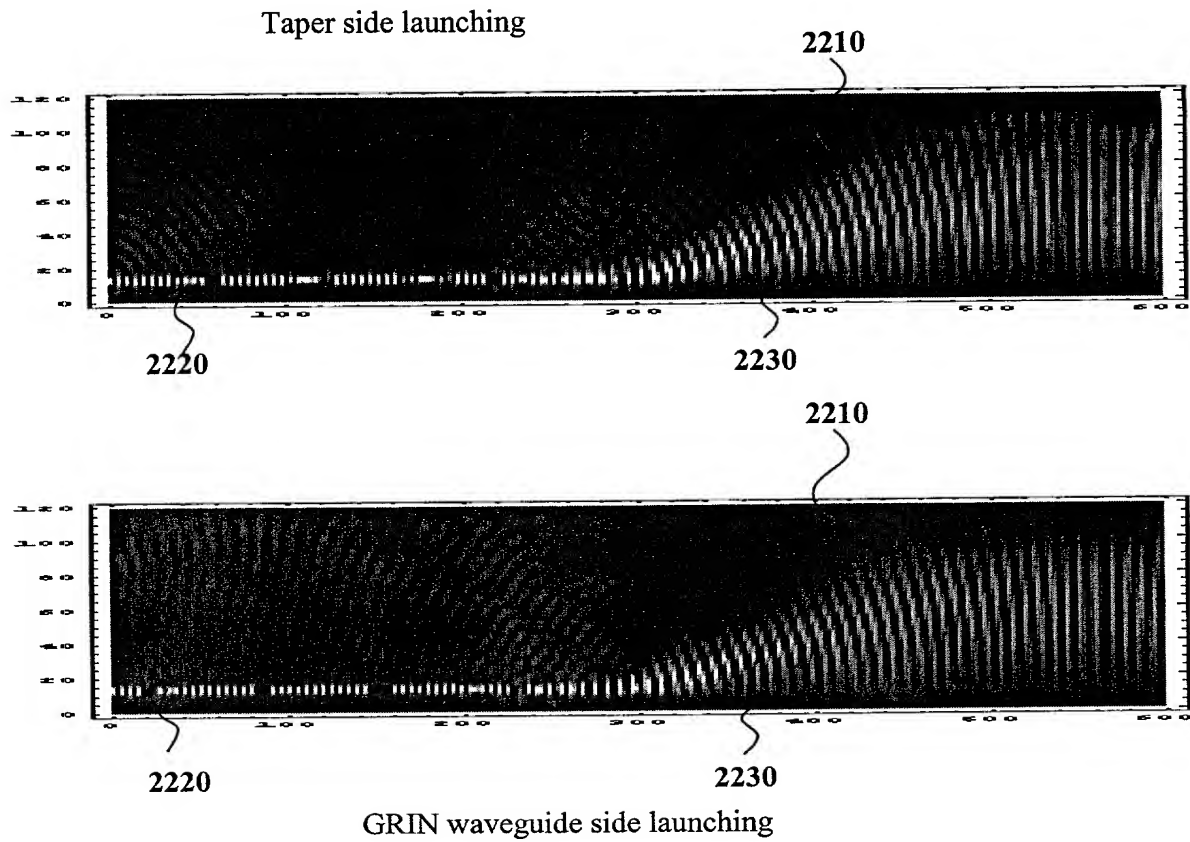


Fig 43

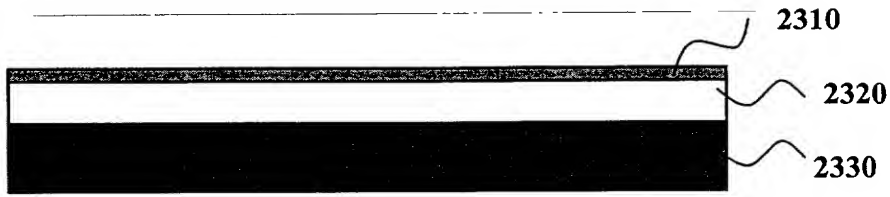


FIG 44A

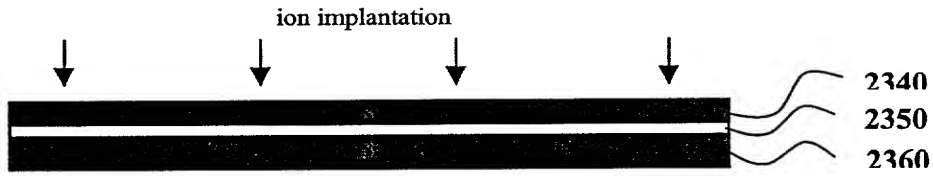


FIG 44B

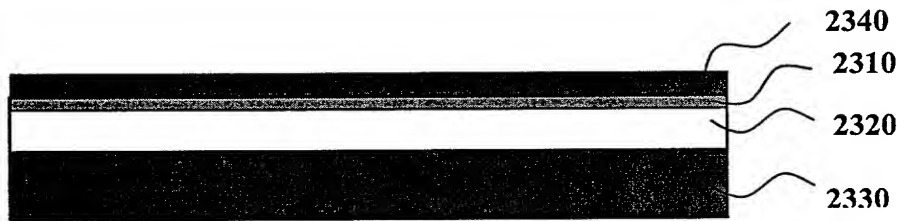


FIG 44C

FIG 44A

FIG 44B

FIG 44C

Fig 45A

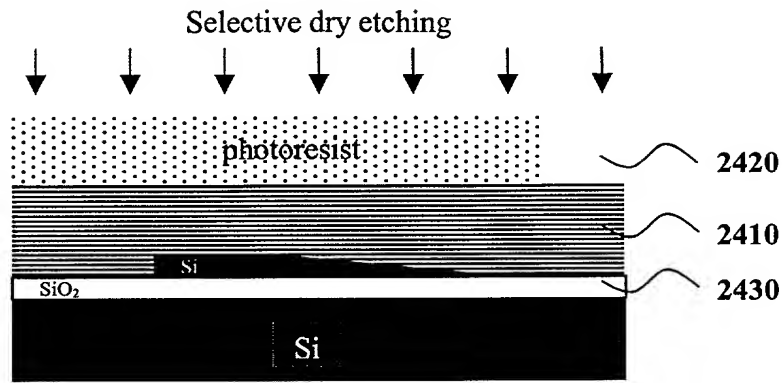


Fig 45B

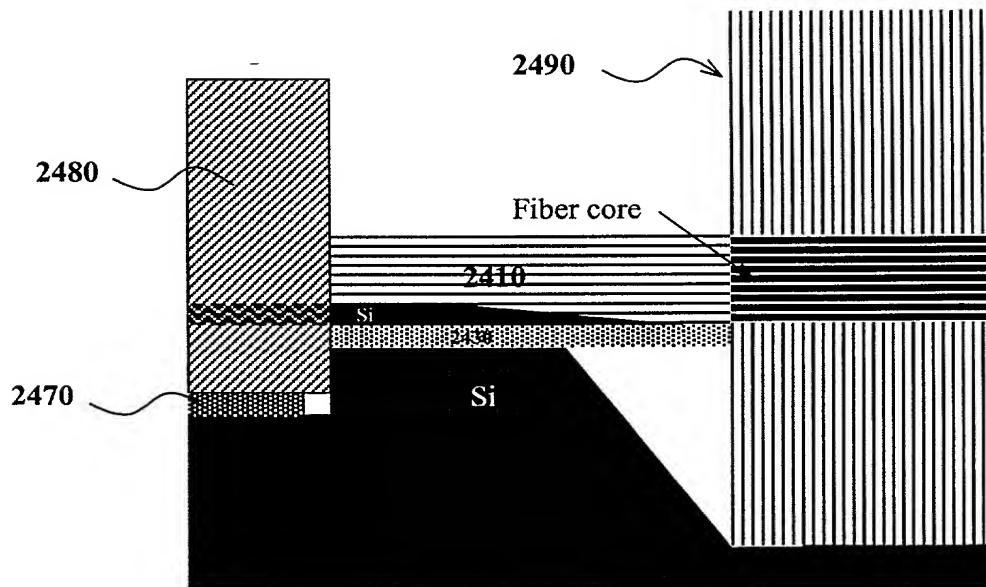
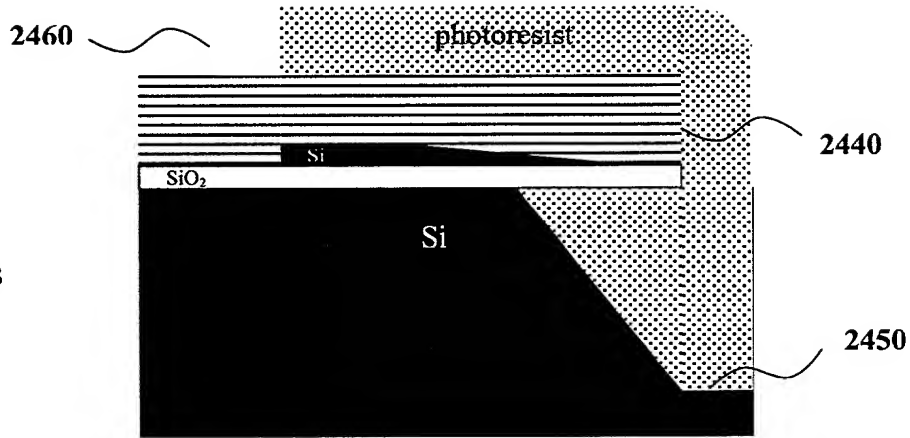


Fig 45C

10093674-101907

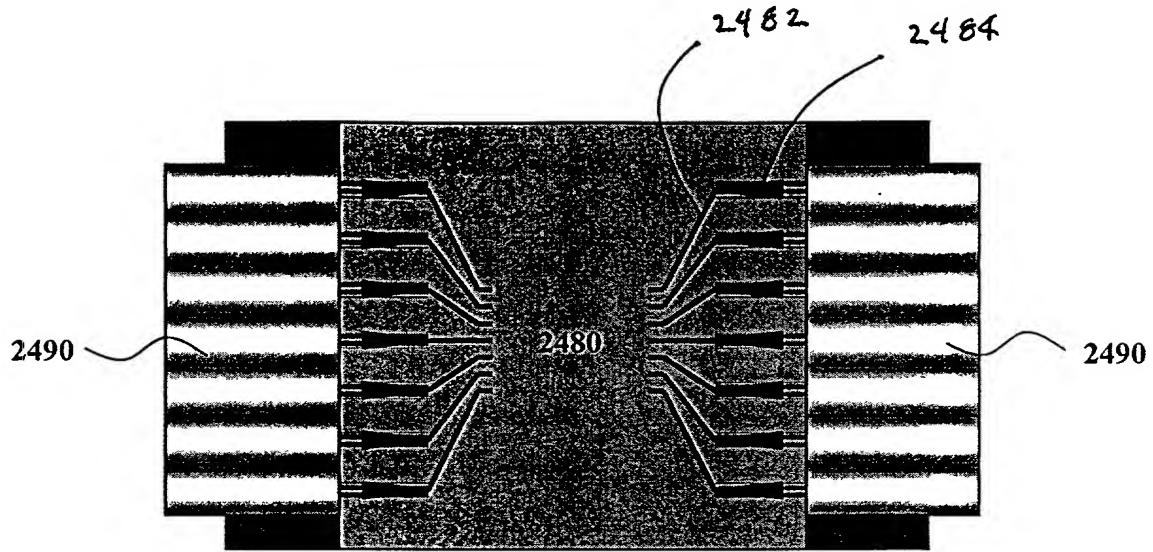


FIG 46

10083674-101901

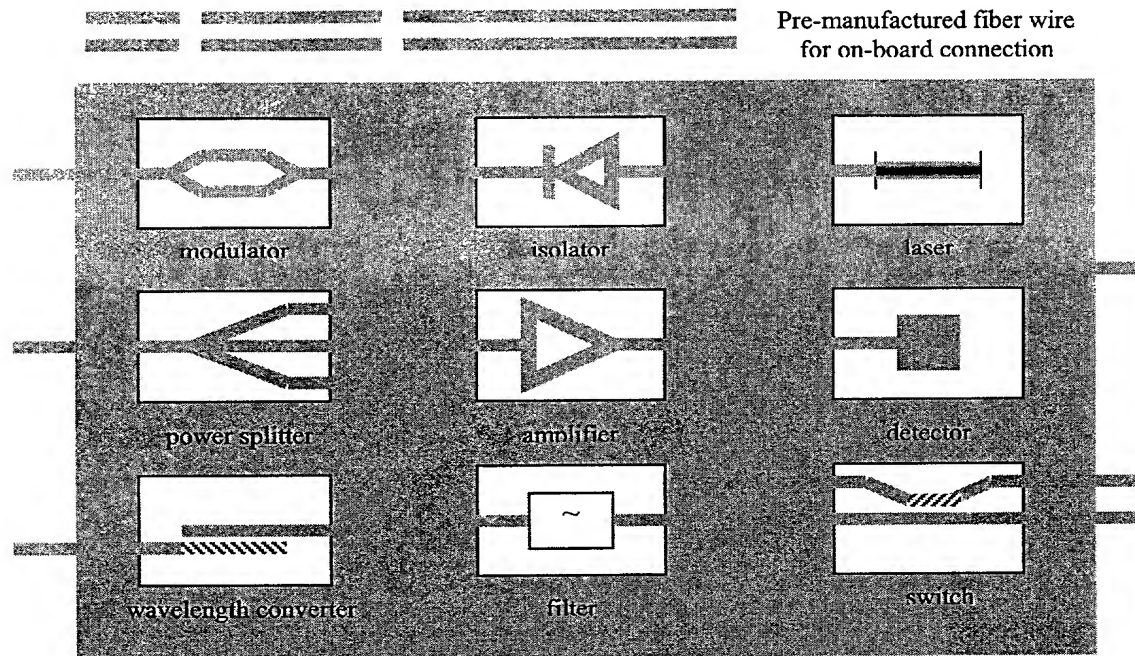


FIG 47